

Reframing Instructional Supervision in the Digital Era: A Thematic Analysis of Teachers' Needs and Pedagogical Challenges

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ABSTRACT

Instructional supervision in early childhood education is intended to support teachers' professional growth, yet in digitally transforming schools it may remain dominated by administrative demands, limited time, and hierarchical evaluation. This study looked at kindergarten teachers' and administrators' views and understanding of instructional supervision, the problems they have, and how they may be supported in a digitalized setting. The study involved 57 kindergarten teachers and principals in Kendari, Indonesia. The study used a qualitative approach, including semi-structured interviews and document analysis, to collect data and conduct thematic analysis. Five related topics emerged. The results show that inadequate follow-up and hierarchical relationships impede introspective conversation, and supervision is often seen as an administrative burden rather than professional support. Additionally, participants' perceptions of supervision varied, ranging from misconceptions about its purpose to views of it as developmental advice. Although digital supervision was appreciated for reducing administrative workloads, boosting flexibility, and enabling readily available feedback, technology alone could not fully change supervisory interactions. The study therefore reframes digital supervision as a relational, reflective system that requires psychologically safe dialogue. Effective implementation should combine digitalization with leadership development, clear supervisory roles, continuous training, and mechanisms that reduce hierarchical barriers to teacher reflection.

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INTRODUCTION

Thru monitoring, reflective evaluation, and ongoing professional development, instructional supervision has long been acknowledged as a methodical and professional approach for raising the caliber of instruction (Glickman et al., 2013a). However, the scope of supervision has gone beyond traditional classroom observation and evaluation in digitally evolving educational environments. In order to support technology integration, adaptive pedagogy, and evolving student needs, supervision is becoming more and more necessary for digital learning platforms, data analytics, online communication, and virtual learning environments (Al-Hail et al., 2024; Al-Khresheh et al., 2025; Bestari et al., 2023; Hasanudin et al., 2025; Prakasvudhisarn et al., 2025; Shabur et al., 2023; Song et al., 2025). Teachers must deal with increased workload and psychological pressure while managing instructional innovation, administrative digitalization, student engagement, and ongoing adaptation as a result of this change (Adomako Gyasi & Sun, 2026; Batra & Halder, 2025; Sandoval-Obando et al., 2026; Sermal & Yunus, 2025; Zhou et al., 2025). In early childhood education (ECE), where teachers must navigate technology-mediated instruction while maintaining emotionally responsive and developmentally appropriate interactions with children and parents, these demands are especially important (Adiarti et al., 2026; Allen & Kelly, 2015; Jannah et al., 2026). In order to balance care-oriented pedagogy with institutional and digital demands, ECE teachers must perform a significant amount of emotional labor (Ntim et al., 2023). However, in many schools, monitoring still prioritizes technical evaluation and administrative compliance over the emotional and pedagogical reality of teachers (Nurulita et al., 2021).

Instructional supervision has been shown to enhance student learning outcomes, teacher competency, and instructional quality (Azizudin, 2022; Effendy, 2019; Raberi et al., 2020; Sujadi et al., 2019). However, a large portion of the literature focuses on quantifiable results like teacher performance, instructional effectiveness, and school management efficiency, as well as the supervisory responsibilities, methods, and technology integration of principals (Afriyanli & Sabandi, 2020; Aprida et al., 2020; Javornik & Mirazchiyski, 2023; Mensah et al., 2025; Wiyono & Rasyad, 2021). According to more recent research, digital platforms can include methods like online observation, digital feedback, remote monitoring, and asynchronous mentoring while also making supervision more adaptable and collaborative (Pribadi, 2023; Sapwa et al., 2025; Stalter, 2026). These advancements haven't, however, always moved oversight in the direction of significant professional assistance. Teachers' practical and emotional demands may not be adequately met by digital monitoring, which may continue to be disjointed (Fathiyah et al., 2025; Mulyanti, 2023; Shi et al., 2025). Supervisory relationships are made more difficult by school principals' increasingly multifaceted roles as administrators, instructional leaders, technology facilitators, and emotional supporters (Chairez, 2022; Karmila & Suchyadi, 2020; Martinez-Garcia et al., 2025; Wolfe et al., 2023).

Despite these advancements, teachers' experiences with instructional supervision in the context of digital transformation have received little attention, especially when it comes to pedagogical difficulties, emotional labor, and the need for professional support (Adomako Gyasi & Sun, 2026; Puroila et al., 2021; Shi et al., 2025). This discrepancy is particularly apparent in early childhood education (ECE), where teachers simultaneously oversee care, communication, emotional responsiveness, pedagogical adaptation, and technological integration. Even though institutional structures and supervisory relationships may affect teachers' propensity to reflect and reveal professional issues, existing supervision research also tends to ignore the relational settings under which supervision happens. When principals have concurrent administrative, evaluative, and supervisory authority, this problem is particularly crucial. Therefore, the primary gap is not just the scarcity of digital tools for supervision, but rather the lack of knowledge about how supervision may continue to be emotionally sensitive, professionally supportive, and relationally significant as educational practices grow more digital. This disparity is further highlighted by the Indonesian environment.

Educational quality is still beset by issues with equality, instructional efficacy, and teacher preparedness for digital change (Asmayawati et al., 2024; Budirahayu & Saud, 2023; Firman & Anhusadar, 2022; Fitrah et al., 2025; Madhakomala et al., 2022; Vila, 2024; Yusinta & Nirwana, 2025). In

order to sustain relevant pedagogical connections with students, teachers are increasingly expected to embrace creative and technology-based learning. According to (Asriadi et al., 2025), (T. Yang & Dong, 2024), and (Yelizarova et al., 2025), teachers in ECE must maintain developmentally appropriate and emotionally supportive learning environments while adjusting to digital educational policies and practices, making these requirements especially challenging. However, prior research has shown that inadequate technological infrastructure, communication barriers, uneven digital literacy, limited supervisory time, and excessive administrative responsibilities are persistent barriers to effective supervision (Adiarti et al., 2026; Batkunde, 2020; Fitriyani, 2020; Rugaiyah, 2016). These circumstances point to an ongoing conflict between the institutional reality in which instructional supervision is applied and its developmental goals.

In light of this, this study investigates the experiences of ECE instructors and school principals with instructional supervision, the pedagogical and professional issues that influence these experiences, and the types of digitally aided supervision that are thot to be significant. By focusing on supervision's relational and professional aspects rather than its primarily technical or evaluative aspects, the study fills this gap. It makes the case that the usefulness of digital supervision should be assessed based on its ability to facilitate reflective discourse, address the pedagogical and emotional realities of teachers, and lower obstacles to meaningful professional participation rather than just its level of technological sophistication. Therefore, by rethinking digital supervision as a relational and reflective support system where technological affordances must be in line with supportive leadership, professional relationships, and the institutional conditions that allow teachers to participate openly in supervision, the study advances instructional supervision scholarship.

METHODS

This study adopted a qualitative research design utilizing reflexive thematic analysis (RTA) to examine the lived experiences, pedagogical challenges, emotional demands, and professional support needs of educators and school leaders regarding instructional supervision in digitally mediated learning environments. Following (Braun & Clarke, 2021), the researchers operated as engaged interpreters within the data generation process, distinguishing this approach from grounded theory or narrative inquiry; participant accounts were analyzed as qualitative data to extract broader supervisory patterns rather than individual life histories (Byrne, 2022). A qualitative approach was selected because prior research has predominantly focused on quantitative effectiveness metrics and managerial outcomes, offering limited insight into how supervision is experienced, interpreted, and negotiated in daily professional contexts (Creswell & Poth, 2024). Consequently, RTA provided an appropriate framework to examine the contextual, emotional, relational, and professional dimensions of digital instructional oversight (Braun & Clarke, 2021; Kiger & Varpio, 2020).

Participants were selected using purposive sampling based on two primary criteria: direct engagement in digital instructional supervision as a supervisee or supervisor, and willingness to share their perspectives. Initial selection was conducted in collaboration with school administrators and local educational authorities, followed by broader recruitment to ensure variation across professional roles, service durations, and institutional contexts. Data collection continued until recurring patterns were evident across interviews, though sampling extended to 57 participants to maintain proportional representation across all demographic categories. Table 1 summarizes the demographic background and distribution of the research participants.

Table 1. Details of Participant Distribution

Demographic Category	Total	Persentase (%)
Gender		
Male	5	9%
Female	52	91%
Position		
Teacher	36	63%
School Principal	21	37%

Length of Service		
Less than 10 years	11	19%
10 to 20 years	36	63%
More than 20 years	10	18%
Level of digital literacy		
High	24	42%
Moderate	31	54%
Low	2	4%
Area		
Urban	34	60%
Semi-urban	23	40%

Data were collected through semi-structured, audio-recorded one-on-one interviews averaging approximately one hour in duration. Guided by a protocol with iterative probing questions, the interviews explored supervisory experiences with digital tools, operational obstacles, support needs, and proposals for supervisory enhancement (Ruslin et al., 2022; Wulandari, Krismona, et al., 2026). To achieve contextual triangulation rather than quantitative comparison, four categories of school documents- annual programs, semester programs, Weekly Learning Implementation Plans (RPPM), and Daily Learning Implementation Plans (RPPH)- were analyzed alongside interview transcripts. Ethical protocols were strictly observed prior to data collection by fully informing participants of the research objectives, ensuring voluntary participation, and establishing confidentiality and transparency standards (Mirza et al., 2023).

Data analysis followed (Braun & Clarke, 2021) six recursive phases of RTA, spanning dataset familiarization, initial coding, candidate theme construction, review, definition, and final reporting, retaining a strictly qualitative focus throughout. Study rigor and trustworthiness were maintained through methodological and theoretical triangulation, member checking of selected transcripts and preliminary interpretations (Birt et al., 2016), and continuous reflexive engagement. Potential power imbalances were minimized as the research team held no direct supervisory authority over participants. Finally, institutional ethical authorization was secured prior to data collection, with all digital assets anonymized via participant coding and stored on secure, password-protected devices.

FINDINGS AND DISCUSSION

Result

The analysis of the 57 interview transcripts generated five interconnected themes that capture participants' experiences, interpretations, and expectations regarding instructional supervision in digitally evolving early childhood education settings. The themes illustrate a progression from participants' experiences of current supervisory practices and their perceived shortcomings, through variations in understanding instructional supervision, to their expectations for digitally supported alternatives. Table 2 summarizes the main themes, sub-themes, supporting dimensions, and the core analytical insights derived from the dataset.

Table 2. Thematic Summary

Main Theme	Sub-themes	Supporting dimensions	Core Analytical Insight
1. Perceptions of Current Instructional Supervision	Administrative burden; time constraints; limited support	Documentation, workload, limited supervisory time	Supervision was often experienced as an additional workload rather than sustained professional support.
2. Shortcomings of Current Supervision	Curriculum demands; limited follow-up;	Merdeka Curriculum, one-time evaluation, principal-teacher hierarchy	Procedural and institutional conditions constrained reflective and developmental supervision.

	hierarchical relationships		
3. Understanding of Instructional Supervision	Developmental understanding; conceptual ambiguity; misconceptions	Observation, reflection, guidance, divergent meanings of supervision	Participants' interpretations of supervision shaped how they understood and responded to supervisory practices.
4. Need for Digital-Based Supervision	Flexibility; accessibility; efficiency	Time management, digital access, feedback	Digital supervision was valued primarily as a response to structural limitations of conventional supervision.
5. Recommendations for Digital Supervision	Usability; training; collaborative features	Simple interface, capacity building, peer learning	Participants wanted technology that supported, not replaced, meaningful professional relationships.

Teachers' Perceptions of Current Instructional Supervision Activities

Participants described current instructional supervision in varied but predominantly critical terms. Across the dataset, supervision was commonly experienced as a formal requirement that provided limited opportunities for meaningful professional learning. Participants' accounts indicated that time constraints, extensive documentation, and competing responsibilities frequently reduced opportunities for reflective dialogue and pedagogical support.

Several participants specifically described the time and administrative demands associated with supervision. One participant explained that, *"it is difficult to manage time with other activities"* (R02), while another noted that, *"there are too many documents that must be prepared"* (R01). Similarly, supervision was described as *"ineffective because it requires energy and time"* (R06), while another participant emphasized that the process was *"still manual, which takes longer"* (R09). These accounts indicate that the perceived burden of supervision was not simply related to the existence of supervision itself, but to the way supervisory procedures were organized and experienced within teachers' existing workloads.

Principals' accounts further illustrated the structural constraints surrounding supervision. One principal explained that, *"the obstacles that are commonly experienced are due to the many components that must be supervised while time is limited"* (R09). This account suggests that the limitations of supervision were experienced by both teachers and school leaders, although from different institutional positions. Teachers emphasized workload and limited support, whereas principals highlighted the difficulty of managing multiple supervisory responsibilities within constrained time and resources.

Taken together, participants' accounts portray current supervision as a process constrained by structural and managerial conditions. Rather than consistently functioning as a space for professional reflection, supervision was frequently experienced as an additional administrative responsibility. The findings therefore suggest that dissatisfaction with supervision is embedded in the organization of supervisory work, particularly the allocation of time, documentation demands, and limited opportunities for sustained professional dialogue (Atashi et al., 2024; Effendi et al., 2025; Heläß et al., 2025; Rothwell et al., 2021).

Teachers' Perceptions of Current Instructional Supervision Shortcomings

Participants identified three closely related shortcomings in existing supervision: difficulties associated with curriculum implementation, limited follow-up after supervision, and hierarchical supervisory relationships. The implementation of the Merdeka Curriculum was described as an important source of supervisory difficulty. Participants did not necessarily criticize the curriculum itself; rather, they emphasized the increasing complexity of assessment and documentation requirements. One participant noted, *"There is a lack of time for teachers to receive assistance from the*

principal in implementing the Merdeka Curriculum" (R04). This account suggests that changes in curriculum demands were not always accompanied by corresponding adjustments in supervisory structures, leaving teachers with limited opportunities to obtain pedagogical assistance.

A second concern was the absence of structured follow-up after supervisory activities. Supervision was frequently experienced as a one-time evaluative event rather than as part of a continuous process of professional learning. One participant stated that *"the lack of follow-up program development in supervision can reduce the effectiveness of the supervision itself"* (R13). The absence of follow-up therefore weakened the developmental function of supervision by separating observation and evaluation from subsequent reflection, assistance, and improvement (Chipu, 2026; Rees et al., 2020).

The relational dimension of supervision emerged as an even more consequential concern. One participant described supervision as *"authoritarian rather than collaborative"* (R26). Participants indicated that principals often simultaneously occupied the roles of instructional supervisor, administrator, and evaluator. This convergence of roles created an asymmetrical supervisory relationship in which teachers could be expected to disclose pedagogical difficulties to the same authority figure responsible for evaluating their performance. Consequently, participants described limited opportunities for open dialogue and expressed concerns about experimenting with new pedagogical practices when negative evaluation was perceived as a possibility.

These accounts indicate that the shortcomings of supervision cannot be reduced to procedural inefficiency. They are also shaped by institutional relationships and power structures. Participants' experiences suggest that collaborative supervision requires more than the adoption of collaborative techniques; it also requires relational conditions in which teachers can discuss difficulties without experiencing supervision primarily as evaluation. Digital tools may facilitate communication, asynchronous feedback, and shared access to supervisory information, but participants' accounts indicate that technology alone would not necessarily alter these relationships. Without changes in supervisory roles and leadership practices, digital systems could reproduce existing patterns of monitoring and documentation rather than create more reflective forms of professional support.

Teachers' Understanding of Instructional Supervision Activities

Participants demonstrated varied understandings of what instructional supervision means and what activities it should involve. Some participants understood supervision as a professional guidance process intended to improve teaching, whereas others associated the term with meanings that were less connected to educational practice. A particularly distinctive example was provided by R05, who stated that *"instructional supervision is carried out by people who have knowledge and experience in the health sector"* (R05). Rather than interpreting this statement simply as an individual lack of knowledge requiring additional training, the finding points to ambiguity in how the concept of instructional supervision is understood. The response suggests that the term supervision may be interpreted through meanings that are not necessarily anchored in the educational and professional framework intended by the study. This conceptual ambiguity is important because participants' understanding of supervision can shape what they expect from supervisory encounters and how they interpret their interactions with supervisors.

In contrast, other participants articulated a more explicitly developmental understanding. R04 described supervision through *"pre-observation discussions, conducting observations, performing analyses, and determining strategies"* (R04), reflecting an understanding of supervision as a structured cycle of preparation, observation, reflection, and subsequent action. Similarly, R15 described instructional supervision as *"a process of guidance in professional education in teaching introduction through observation, discussion, and planned guidance"* (R15). These accounts align more closely with Glickman et al.'s (Glickman et al., 2013a) emphasis on collaborative and reflective relationships between teachers and principals.

The contrast among participants' accounts suggests that conceptual understanding constitutes an important dimension of supervisory experience. When supervision is understood primarily as evaluation or an externally imposed activity, participants may be less likely to recognize its

developmental potential. Conversely, understanding supervision as a process of guidance, reflection, and professional learning may enable teachers to interpret observation and feedback as opportunities for improvement. Thus, conceptual understanding functions as a bridge between how supervision is formally organized and how it is experienced in practice.

Teachers' Need for Digital-Based Instructional Supervision

Participants expressed interest in digitally supported instructional supervision, particularly because of its potential to address practical limitations associated with conventional supervisory procedures. Rather than describing digitalization primarily as a technological innovation, participants emphasized accessibility, flexibility, and efficiency. One participant explained that digital supervision would be useful *"because it can make the process easier as it can be accessed anytime"* (R09). Another described digital-based supervision as important *"for the improvement of teacher professionalism in an era of increasingly advanced technology"* (R35). These accounts indicate that participants' interest in digital supervision was closely connected to practical professional needs rather than technological enthusiasm alone.

The perceived value of digital supervision was therefore associated with its potential to reduce the time and procedural burden of conventional supervision while maintaining opportunities for professional feedback. Participants' accounts suggest that digital platforms could provide more flexible access to supervisory activities, particularly when face-to-face supervision is constrained by workload and competing responsibilities. However, the findings also indicate that digitalization was not viewed as sufficient by itself. The perceived usefulness of a digital system remained dependent on its accessibility, ease of use, and capacity to support meaningful communication between teachers and supervisors.

Teacher Recommendations regarding Digital-Based Instructional Supervision

Participants provided recommendations concerning the usability, accessibility, appearance, and implementation of digital-based instructional supervision. A recurring concern was that the system should be simple and understandable, particularly for users with different levels of digital experience. One participant recommended *"something simpler but with clear instructions for use"* (R02), while another suggested that *"the application be easy to understand, especially for teachers who are approaching retirement"* (R45). Participants also offered suggestions regarding the visual presentation of the system. For example, R26 proposed *"an instructional supervision display with caricatures of teachers"* (R26), while R42 recommended *"an easy-to-use application such as a cloud-based or e-learning system"* (R42). These recommendations indicate that participants associated effective digital supervision with usability and contextual appropriateness rather than technical sophistication alone.

Participants also emphasized the need for preparation and support during implementation. One participant suggested that *"if possible, there should be a workshop on digital-based instructional supervision"* (R54). Importantly, this recommendation should not be interpreted merely as a demand for technical training. Taken together with participants' earlier accounts, it reflects the need for organizational preparation, shared understanding of supervisory purposes, and sufficient support for adapting existing supervisory practices to a digital environment. Overall, participants envisioned digital supervision as a system that should be simple, accessible, flexible, and supportive of professional reflection. The findings also indicate that successful digitalization depends on conditions beyond the technology itself, including leadership practices, user preparedness, and the quality of communication between teachers and supervisors.

Integrative Analysis of Teachers' Experiences of Instructional Supervision in the Digital Context

The five themes are analytically interconnected rather than representing isolated categories. Across the complete dataset, participants' accounts reveal a relationship between how supervision is organized, how it is experienced, how its purpose is understood, and what participants expect from digital alternatives. The first two themes show that participants' dissatisfaction with current

supervision is rooted in both procedural and relational conditions. Excessive documentation, limited time, curriculum-related demands, and insufficient follow-up reduce the developmental opportunities provided by supervision. At the same time, hierarchical relationships may restrict teachers' willingness to communicate professional difficulties openly. Thus, supervision is not experienced solely as a technical procedure; it is experienced within organizational structures that influence the nature of interaction between teachers and school leaders.

The third theme adds a conceptual dimension to this pattern. Participants did not share a uniform understanding of instructional supervision. Their accounts ranged from developmental interpretations involving observation, reflection, and guidance to meanings that were disconnected from educational supervision. This variation suggests that the meaning of supervision is partly constructed through participants' prior understanding and institutional experiences. Conceptual ambiguity may therefore reinforce the perception of supervision as an administrative or evaluative activity, while a developmental understanding may create greater openness to reflective supervision. The fourth and fifth themes show how these accumulated experiences shaped expectations regarding digital supervision. Participants' interest in digital systems was closely related to the limitations they experienced in conventional supervision: time constraints, administrative burdens, accessibility, and limited opportunities for feedback. Digitalization was therefore valued primarily as a potential means of reorganizing supervisory processes rather than as an end in itself.

Taken together, the findings indicate that participants did not simply seek a digital version of existing supervision. They expressed a desire for a form of supervision that is more flexible, accessible, reflective, and supportive of professional dialogue. At the same time, the findings demonstrate that technological change alone cannot guarantee such transformation. The effectiveness of digital supervision depends on how technology interacts with supervisory roles, institutional relationships, conceptual understanding, and opportunities for psychologically safe professional dialogue. The central finding is therefore that digital supervision has transformative potential only when technological innovation is accompanied by changes in the relational and institutional conditions under which supervision is enacted.

Discussion

Reframing Instructional Supervision Through Institutional Power

The findings point to a clear tension between the developmental purpose of instructional supervision and the way it is experienced in practice. Participants often described supervision as time-consuming, administratively demanding, and only loosely connected to the pedagogical and emotional challenges they face. This contrasts with Glickman's developmental supervision model, which places dialogue, reflection, collaboration, and professional growth at the center of supervision (Glickman et al., 2013a, 2013b). However, the findings do not necessarily suggest that Glickman's model is inadequate. Rather, they draw attention to an issue that receives less explicit attention in the model: the role of institutional power in shaping whether collaborative supervision can actually take place.

One reason for this tension is the multiple roles held by school principals. In the settings examined in this study, principals could act as administrators, evaluators, and instructional supervisors at the same time. This arrangement creates an unequal relationship in which teachers may be expected to discuss their difficulties and reflect openly while speaking with someone who also has the authority to evaluate their performance. Such conditions can affect what teachers feel comfortable sharing and how they interpret feedback from their supervisors. Previous research similarly shows that organizational hierarchies and supervisory relationships can influence teachers' willingness to communicate openly and participate in professional learning (Detert & Edmondson, 2011; Shi et al., 2025). Critical perspectives on supervision also point to the possibility that supervisory practices can reproduce institutional authority and managerial accountability rather than strengthen teachers' professional agency (OECD, 2025; Puroila et al., 2021; Reid et al., 2025).

This helps extend how Glickman's developmental supervision model can be understood. The model focuses largely on the way supervisors approach their work, whether through collaborative, directive, or non-directive practices. The present findings suggest that the success of any of these approaches also depends on the organizational setting in which supervision takes place. A principal may use collaborative language and encourage reflection, but teachers may still be reluctant to speak openly if that same principal has formal authority over their evaluation. Collaboration, therefore, is not simply a technique that supervisors can apply. It also depends on whether the surrounding institutional structure allows teachers to participate without feeling overly exposed to evaluation.

Institutional power can consequently be viewed as an important condition shaping developmental supervision. Supervisory practices may create opportunities for dialogue, but the organizational structure influences whether teachers feel safe enough to use those opportunities. When teachers are concerned about how their comments might affect their evaluation, they may be less willing to discuss uncertainty, acknowledge difficulties, or question existing practices. Conversely, clearer boundaries between developmental support and formal evaluation may make it easier for teachers to participate honestly in reflective conversations. The contribution of this study is therefore not to replace Glickman's model, but to extend it by making the institutional conditions surrounding developmental supervision more visible.

This issue is especially important in early childhood education. ECE teachers carry considerable emotional responsibilities as they maintain caring and developmentally appropriate relationships with children and parents while also responding to pedagogical and institutional demands (Fischer et al., 2021; Han & Xu, 2021; Wulandari, Zahra, et al., 2026; Zackariasson & Magnusson, 2024). Yet participants' experiences suggest that these emotional and relational dimensions are rarely central to conventional supervision. Instead, attention tends to remain on administrative completion and observable teaching performance. Teachers' emotional experiences are usually not considered in educational supervision even though they are crucial to pedagogical quality and the well-being of the professional (Hargreaves, 2001; Onodera, 2026; B. Yang et al., 2025; Zembylas, 2005).

For ECE, developmental supervision therefore needs to involve more than improving the frequency or technical quality of classroom observation. Teachers also need an environment where the supervisory relationship enables and encourages them to discuss their uncertainties, difficulties and emotional challenges, knowing that these revelations won't be seen as weaknesses or shortcomings of a professional nature. Emotional responsiveness is thus not an additional feature of good supervision; it is part of the relational environment that makes meaningful reflection possible.

Digital Supervision as a Relational Rather Than Technological Transformation

Participants' interest in digital supervision appeared to be driven mainly by practical needs rather than by enthusiasm for technology itself. They valued digital supervision because it could reduce administrative work, provide greater flexibility, and make feedback easier to access. This is consistent with recent work on digitally supported supervision and educational leadership (Hess & Graf, 2026; Mabotha & Ngcamu, 2026; Mhlanga, 2023; Plekhanov et al., 2023). But at the same time, the results tell us that it would be wrong to think that a change from physical to digital supervision will automatically happen once the digital platform is put in place.

Moving supervision from paper to a digital platform may change the medium without changing the underlying relationship. Documentation and monitoring may become faster and more convenient, but the process may remain evaluative rather than developmental. In a highly hierarchical setting, digital systems could even make monitoring more intensive by allowing teachers' activities and documentation to be tracked more continuously (Afifah et al., 2026; Bahri et al., 2026; Maqfirah et al., 2026). The value of digital supervision therefore depends less on how advanced the technology is than on how it is used within the existing supervisory relationship.

The role of principals' digital competence is important in this regard. When school leaders lack sufficient pedagogical or technological understanding, digital platforms may simply reproduce existing administrative routines instead of supporting professional learning. Previous studies have

similarly linked limited digital leadership capacity with difficulties in developing more collaborative forms of instructional leadership (Antonopoulou et al., 2025; Barokah et al., 2025; Deogaonkar, 2025; Maisyaroh et al., 2021; Ngatini et al., 2025). What matters, therefore, is not only whether principals know how to use digital tools, but whether they can use those tools to support reflection, mentoring, and dialogue rather than extend existing monitoring practices.

For this reason, digital supervision is better understood as a relational transformation supported by technology rather than a technological transformation on its own. Digital platforms can make communication more flexible, provide shared access to resources, and support asynchronous feedback and reflection. However, these possibilities become meaningful only when teachers experience their relationship with supervisors as supportive rather than threatening. This is particularly relevant in ECE, where much of teachers' work involves emotional and relational practices that cannot easily be reduced to technical performance indicators.

Challenges and Opportunities for Digital-Based Instructional Supervision

The implementation of digital supervision is likely to face several practical barriers, including limited time, uneven digital competence among supervisors, and insufficient institutional support. Similar challenges have been reported elsewhere, particularly in relation to unequal infrastructure, unclear policies, and limited training for supervisors (Quinco-cadosales et al., 2024). Importantly, these issues are interconnected. Providing digital infrastructure without strengthening leadership capacity or reconsidering existing supervisory practices may result in little meaningful change.

At the same time, digital supervision offers opportunities to make professional learning more continuous and accessible. Digital platforms can support collaborative observation, sharing of teaching resources, discussion forums, and asynchronous reflection. These scenarios fit quite well with Kolb's experiential learning model, where he identifies experience, reflection, concept development and testing as the four key components in a person's learning process (A. Y. Kolb & Kolb, 2021; D. A. Kolb, 1984). In a digital environment, teachers can document their teaching experiences, reflect on them, receive feedback, and try new approaches without relying entirely on face-to-face supervision (Husnaeni & Burga, 2024; Murza et al., 2025; Safitri & Nurfuadi, 2025).

However, these opportunities depend on the conditions surrounding implementation. Continuous training, clear policies, adequate infrastructure, and leadership preparation are all important, but so is a shared understanding of what digital supervision is intended to achieve. If teachers see a digital platform simply as another way to monitor or evaluate them, its potential to support professional reflection may be limited. Digital supervision should therefore begin with a relational question: how can technology make professional dialogue easier and more meaningful? It's crucial to be efficient, but not at the expense of other qualities that successful digital guidance may have.

Theoretical Contribution: From Developmental Supervision to Power-Conditioned Supervision

Taken together, the findings point toward a refinement of developmental supervision rather than a rejection of it. Glickman's model remains valuable because it places teacher growth, collaboration, and reflection at the heart of supervision (Glickman et al., 2013a, 2013b). What the present findings add is a clearer account of the institutional conditions surrounding these processes. Supervisory relationships do not take place between individuals with equal authority; they are embedded within organizational structures that shape who can evaluate whom, what can safely be disclosed, and how feedback is interpreted.

Based on these findings, developmental supervision can be understood through three connected dimensions. The first is the supervisory approach, which includes observation, feedback, coaching, reflection, and collaborative decision-making. The second is institutional power, including organizational roles, evaluative authority, hierarchy, and expectations that shape the relationship between teachers and supervisors. The third is relational safety, referring to teachers' sense that they

can communicate difficulties, uncertainty, disagreement, and professional needs without excessive fear of negative evaluation. These dimensions can be represented in Figure 1.

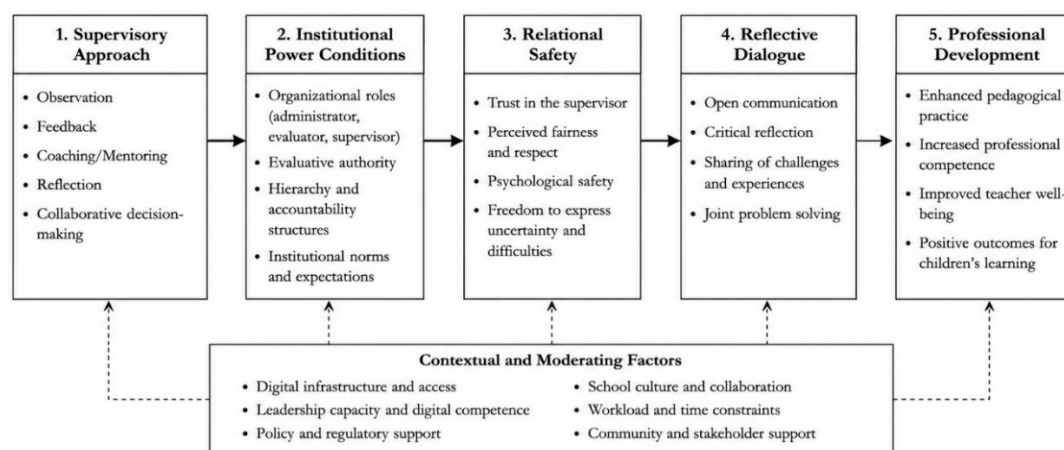


Figure 1. Power Conditioned Model of Developmental Instructional Supervision

This formulation highlights why a collaborative supervisory approach does not automatically result in reflective dialogue. The institutional context matters because it shapes whether teachers feel able to participate openly. Institutional power is therefore not simply background context; it forms part of the process through which supervision is experienced. This extends the developmental supervision perspective by showing that professional dialogue depends not only on what supervisors do, but also on the organizational conditions that make such dialogue possible.

The same argument applies to digital supervision. Technology can improve access and flexibility, but it cannot remove institutional power asymmetries on its own. Digital systems may support relational safety when they enable flexible communication, accessible feedback, and collaborative reflection. However, they may also reproduce existing power relations when primarily used for monitoring, documentation, and accountability. The effectiveness of digital supervision therefore rests on the interaction between technology, supervisory practice, and institutional power.

Practical Implications

The findings point to several practical directions for developing more responsive instructional supervision in ECE. First, schools could use technology to support reflective mentoring rather than relying mainly on checklist-based evaluation. For example, asynchronous video reflection would allow teachers to record selected parts of their teaching and receive feedback without having to reorganize their schedules around face-to-face observation. Previous studies suggest that video-based reflection can strengthen teacher awareness, reflection, and professional learning (Bjørndal, 2025; Gaudin & Chaliès, 2015; Hamel & Viau-Guay, 2019).

Second, digital teaching portfolios could help shift supervision from one-time evaluation toward longer-term professional development. Lesson plans, classroom recordings, reflective journals, digital learning materials, and professional development records could provide a broader picture of teachers' growth over time (Alkaabi & Abdallah, 2024; Garnier & Zorn, 2026). Such portfolios may also capture relational and play-based practices that are not easily represented through conventional observation instruments (Cheng & Chau, 2014; Oakley et al., 2014; Pratiwi et al., 2025).

Third, schools need to address the power relations built into supervisory practices. Clearer distinctions between developmental mentoring and formal evaluation could make it easier for teachers to discuss professional difficulties without immediately associating disclosure with evaluation. Confidential or anonymous feedback mechanisms may also give teachers a safer way to communicate concerns about supervision and identify the support they need (Detert & Edmondson, 2011).

Fourth, digital platforms should provide opportunities for teachers to learn with and from one another rather than functioning only as top-down monitoring systems. Online professional learning spaces, discussion forums, shared teaching resources, and peer reflection could support collective

learning and reduce professional isolation (Peng et al., 2024; Stavermann, 2025). Such opportunities are particularly relevant in ECE, where teachers often draw heavily on contextual and experiential knowledge when responding to children's developmental and socio-emotional needs (Admiraal et al., 2021; Trust et al., 2017).

Finally, principals need preparation that goes beyond basic digital skills. They need support in instructional coaching, empathetic communication, reflective feedback, and the use of digital evidence for professional learning. Effective digital instructional leadership requires technological, pedagogical, and relational competencies rather than administrative management alone (Dexter, 2018). Ultimately, the goal of digital transformation should not be to build more sophisticated monitoring systems, but to create supervision environments in which technology helps strengthen professional trust, reflective dialogue, and meaningful teacher development (Hargreaves, 2001; Zembylas, 2005).

CONCLUSION

This study provides a comprehensive understanding of the challenges and potential of digital-based instructional supervision, particularly in the context of kindergarten education. The findings of this study indicate that current supervision practices are still limited by structural inefficiencies, time constraints, and administrative-oriented activities that limit the benefits of supervision itself in improving teacher professionalism. In general, teachers view supervision activities as necessary but burdensome. This reflects a mismatch between the reflective goals of instructional supervision activities and their actual implementation in the field.

Thematic analysis emphasizes that digital transformation can facilitate supervision activities to be more reflective, collaborative, and data-driven. A well-designed digital platform can reduce administrative burdens, improve communication between teachers and principals, and facilitate timely feedback. However, this potential can only be realized if digital-based supervision is accompanied by conceptual clarity, digital competence, and a sound ethical foundation.

Overall, this study concludes that the shift to digital-based supervision can be a turning point for the future of teacher professional development. Therefore, before shifting to a digital-based system, it is necessary to ensure that both teachers and principals understand that the concept of supervision is not limited to assessment and evaluation, but also includes improving digital competence and ethics in its use, as well as strengthening more empathetic relationships and fostering trust between teachers and principals. This study contributes to instructional supervision theory by demonstrating that the effectiveness of developmental supervision is shaped not only by supervisory strategies but also by institutional power relations that influence teachers' willingness to participate in reflective dialogue.

REFERENCES

- Adiarti, W., Hutagalung, F. D., Hai-Leng, C., & Asriadi, A. M. M. (2026). Digital literacy in early childhood education: Trends, patterns, challenges and future directions. *Learning Futures and Emerging Technologies*, 34(1), 22–47. <https://doi.org/10.1108/LFET-04-2025-0054>
- Admiraal, W., Schenke, W., De Jong, L., Emmelot, Y., & Sligte, H. (2021). Schools as professional learning communities: What can schools do to support professional development of their teachers? *Professional Development in Education*, 47(4), 684–698. <https://doi.org/10.1080/19415257.2019.1665573>
- Adomako Gyasi, P., & Sun, B. (2026). The impact of digital technology on teacher resilience, potential benefits, and challenges: A review. *Cogent Arts & Humanities*, 13(1). <https://doi.org/10.1080/23311983.2026.2642498>
- Afifah, Z., Hilmiyati, F., & Meiliawati, F. (2026). Analisis Kesiapan Sekolah Dengan Melakukan Tindak Lanjut Dalam Pelaksanaan Asesment Nasional: Analysis of School Readiness Through Follow-Up Actions in the Implementation of the National Assessment. *Attadrib: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 9(1), 1–14. <https://doi.org/10.54069/attadrib.v9i1.1093>

- Afriyanli, H. K., & Sabandi, A. (2020). Pengaruh Supervisi Kepala Sekolah Terhadap Kinerja Guru. *JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan)*, 5(1), 51. <https://doi.org/10.31851/jmksp.v5i1.3520>
- Al-Hail, M., Zguir, M. F., & Koç, M. (2024). Exploring Digital Learning Opportunities and Challenges in Higher Education Institutes: Stakeholder Analysis on the Use of Social Media for Effective Sustainability of Learning–Teaching–Assessment in a University Setting in Qatar. *Sustainability*, 16(15), 6413. <https://doi.org/10.3390/su16156413>
- Alkaabi, A. M., & Abdallah, A. K. (2024). Portfolio practices in the principal evaluation process: A qualitative case study. *Heliyon*, 10(21), e39467. <https://doi.org/10.1016/j.heliyon.2024.e39467>
- Al-Khreshah, M. H., Alshammari, S. R., & Almayez, M. (2025). Digital integration in the Saudi ELT context: A supervisory lens on teachers' technological efficacy. *Cogent Social Sciences*, 11(1). <https://doi.org/10.1080/23311886.2025.2526011>
- Allen, L., & Kelly, B. B. (Eds.). (2015). *Transforming the Workforce for Children Birth Through Age 8: A Unifying Foundation*. National Academies Press (US).
- Antonopoulou, H., Matzavinou, P., Giannoukou, I., & Halkiopoulos, C. (2025). Teachers' Digital Leadership and Competencies in Primary Education: A Cross-Sectional Behavioral Study. *Education Sciences*, 15(2). <https://doi.org/10.3390/educsci15020215>
- Aprida, Y., Fitria, H., & Nurkhalis, N. (2020). Pengaruh Supervisi Kepala Sekolah dan Motivasi Kerja Guru Terhadap Kinerja Guru. *Journal of Education Research*, 1(2), 160–164. <https://doi.org/10.37985/joe.v1i2.16>
- Asmayawati, Yufiarti, & Yetti, E. (2024). Pedagogical innovation and curricular adaptation in enhancing digital literacy: A local wisdom approach for sustainable development in Indonesia context. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100233. <https://doi.org/10.1016/j.joitmc.2024.100233>
- Asriadi, AM. M., Mirawati, M., Hopiani, A., & Despriliani, R. (2025). Future-ready instructional technology for early childhood education: A bibliometric and meta-synthesis analysis. *On the Horizon*, 33(4), 418–443. <https://doi.org/10.1108/OTH-03-2025-0035>
- Atashi, V., Movahedi Najafabadi, M., Afshari, A., & Ghafari, S. (2024). Barriers to effective clinical supervision from the perspective of nurses: A descriptive qualitative study. *Nurs Open*, 11(1), e2028. <https://doi.org/10.1002/nop2.2028>
- Azizudin. (2022). Peningkatan Kompetensi Guru dalam Proses Pembelajaran Melalui Supervisi Klinis di SMP Negeri 6 Mataram. *Jurnal Pedagogy*, 9(1), 94–100. <https://doi.org/10.33394/ip/v9i1.4670>
- Bahri, S., Satriani, S., & Hasbi, M. (2026). Transforming Madrasah Education: Integrating Technology, Governance, and Commitment within Management Information Systems. *Dirasah International Journal of Islamic Studies*, 4(1), 49–66. <https://doi.org/10.59373/drs.v4i1.73>
- Barokah, A. I., Yuliana, L., & Raharja, S. (2025). Developing a community-based academic supervision model: A strategic reform for enhancing professional learning in Indonesian primary schools. *European Journal of Sustainable Development Research*, 9(4), em0332. <https://doi.org/10.29333/ejosdr/16862>
- Batkunde, Y. (2020). Faktor-Faktor Yang Mempengaruhi Pelaksanaan Supervisi Akademik Sekolah Dasar Di Kecamatan Nirunmas Kabupaten Maluku Tenggara Barat. *Jurnal Jendela Ilmu*, 1(2), 65–74. <https://doi.org/10.34124/ji.v1i2.70>
- Batra, S., & Halder, A. (2025). Toward a flourishing workplace: Exploring the impact of digitalization on young construction professionals' physical–mental well-being. *Engineering, Construction and Architectural Management*, 32(10), 6760–6786. <https://doi.org/10.1108/ECAM-02-2024-0190>
- Bestari, P., Awam, R., Sucipto, E., Marsidin, S., & Rifma, R. (2023). Peran Supervisi Pendidikan dalam Meningkatkan Kualitas Pembelajaran di Era Digital. *Jurnal Papeda: Jurnal Publikasi Pendidikan Dasar*, 5(2), 133–140. <https://doi.org/10.36232/jurnalpendidikandasar.v5i2.4016>
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? *Qualitative Health Research*, 26(13), 1802–1811. <https://doi.org/10.1177/1049732316654870>

- Bjørndal, C. (2025). Mentor teachers' self-reflection using video and transcripts: Experiences from action learning in mentor education. *Teaching and Teacher Education*, 166(105181). <https://doi.org/10.1016/j.tate.2025.105181>
- Braun, V., & Clarke, V. (2021). *Thematic Analysis: A Practical Guide*. Sage.
- Budirahayu, T., & Saud, M. (2023). Pedagogical innovation and teacher collaborations in supporting student learning success in Indonesia. *Cogent Education*, 10(2), 2271713. <https://doi.org/10.1080/2331186X.2023.2271713>
- Byrne, D. (2022). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Qual Quant*, 56, 1391–1412. <https://doi.org/10.1007/s11135-021-01182-y>
- Chairez, C. C. (2022). *Principal Perspectives on the Dual Roles of Manager and Instructional Leader*. Walden University.
- Cheng, G., & Chau, J. (2014). Exploring the relationships between learning styles, online participation, learning achievement and course satisfaction: An empirical study of a blended learning course. *British Journal of Educational Technology*, 47(2), 257–278. <https://doi.org/10.1111/bjet.12243>
- Chipu, M. G. (2026). A conceptual analysis of reflective supervision for creating a positive intensive care practice environment. *International Journal of Nursing Sciences*, 13(1), 88–95. <https://doi.org/10.1016/j.ijnss.2025.12.016>
- Creswell, J. W., & Poth, C. N. (2024). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. SAGE Publications Inc.
- Deogaonkar, A. (2025). Digital leadership, AI readiness and strategic resource allocation in education: A configurational approach to post-pandemic transformation. *International Journal of Educational Management*, 39(5), 1105–1119. <https://doi.org/10.1108/IJEM-06-2025-0438>
- Detert, J. R., & Edmondson, A. C. (2011). Implicit Voice Theories: Taken-for-Granted Rules of Self-Censorship at Work. *Academy of Management Journal*, 54(3). <https://doi.org/10.5465/amj.2011.61967925>
- Dexter, S. (2018). The Role of Leadership for Information Technology in Education: Systems of Practices. In J. Voogt, G. Knezek, R. Christensen, & KW. Lai (Eds.), *Second Handbook of Information Technology in Primary and Secondary Education* (Springer I). Springer, Cham. https://doi.org/10.1007/978-3-319-71054-9_32
- Effendi, M. S., Komariah, A., Agustina, S. S., & Dikdik, A. (2025). Beyond Workload: Uncovering the Link Between Supervisor Support, Work-Life Balance, and Lecturer Productivity. *Education Sciences*, 15(9), 1122. <https://doi.org/10.3390/educsci15091122>
- Effendy, N. (2019). Meningkatkan Kemampuan Guru Dalam Melaksanakan Pembelajaran Melalui Supervisi Akademik Berbasis Teknologi Informasi dan Komunikasi (TIK) di SMPN 1 Jaro. *Jurnal Penelitian Tindakan Dan Pendidikan*, 5(1), 49–56.
- Fathiyah, A. N., Hendrawati, G. D., & Subandi. (2025). Pelaksanaan Supervisi Dalam Pembelajaran. *Jurnal Rumpun Manajemen Dan Ekonomi*, 2(1), 180–194.
- Firman, W., & Anhusadar, L. O. (2022). Peran Guru dalam Menstimulasi Kemampuan Kognitif Anak Usia Dini. *kiddo: jurnal pendidikan islam anak usia dini*, 3(2), 28–37. <https://doi.org/10.19105/kiddo.v3i2.6721>
- Fischer, T., Tian, A. W., Lee, A., & Hughes, D. J. (2021). Abusive supervision: A systematic review and fundamental rethink. *The Leadership Quarterly*, 32(6), 101540. <https://doi.org/10.1016/j.leaqua.2021.101540>
- Fitrah, M., Sofroniou, A., Yarmanetti, N., Ismail, I. H., Anggraini, H., Nissa, I. C., Widyaningrum, B., Khotijah, I., Kurniawan, P. D., & Setiawan, D. (2025). Are Teachers Ready to Adopt Deep Learning Pedagogy? The Role of Technology and 21st-Century Competencies Amid Educational Policy Reform. *Educ. Sci.*, 15(10), 1344. <https://doi.org/10.3390/educsci15101344>
- Fitriyani. (2020). Pelaksanaan Supervisi Pengajaran dalam Meningkatkan Profesional Guru di SMA Negeri Kabupaten Aceh Besar. *Jurnal Lembaga Penjaminan Mutu Pendidikan*, (3).
- Garnier, P., & Zorn, S. (2026). Role and effects of supervision in supporting Autism Early Childhood Unit teams. *Research in Autism*, 132(202840). <https://doi.org/10.1016/j.reia.2026.202840>

- Gaudin, C., & Chaliès, S. (2015). Video viewing in teacher education and professional development: A literature review. *Educational Research Review*, 16, 41–67. <https://doi.org/10.1016/j.edurev.2015.06.001>
- Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2013a). *Supervision and instructional leadership: A developmental approach* (9th ed.). Pearson.
- Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2013b). *The basic guide to supervision and instructional leadership*.
- Hamel, C., & Viau-Guay, A. (2019). Using video to support teachers' reflective practice: A literature review. *Cogent Education*, 6(1), 1673689. <https://doi.org/10.1080/2331186X.2019.1673689>
- Han, Y., & Xu, Y. (2021). Unpacking the Emotional Dimension of Doctoral Supervision: Supervisors' Emotions and Emotion Regulation Strategies. *Front Psychol*, 12(651859). <https://doi.org/10.3389/fpsyg.2021.651859>
- Hargreaves, A. (2001). Emotional geographies of teaching. *Teachers College Record*, 103(6), 1056–1080. <https://doi.org/10.1111/0161-4681.00142>
- Hasanudin, H., Sowiyah, S., Rini, R., Rahman, B., & Handoko, H. (2025). A Systematic Literature Review on Academic Supervision and Digital Leadership Practices in Creating Teacher'S Performance. *Prima Magistra: Jurnal Ilmiah Kependidikan*, 6(3), 328–346. <https://doi.org/10.37478/jpm.v6i3.5620>
- Helaß, M., Greinacher, A., Genrich, M., & Al., E. (2025). Nursing staff and supervisors perceptions on stress and resilience: A qualitative study. *BMC Nursing*, 24(76). <https://doi.org/10.1186/s12912-025-02712-x>
- Hess, T., & Graf, A. (2026). Beyond the digital transformation? Towards a meta- concept for managing the digital change of companies. *Journal of Information Technology*, 0(0), 1–25. <https://doi.org/10.1177/02683962261447507>
- Husnaeni, & Burga, M. A. (2024). Supervisors' role quality and its effect on the students' ability in compiling reports. *Cakrawala Pendidikan*, 43(1), 127–139. <https://doi.org/10.21831/cp.v43i1.41760>
- Jannah, H. N., Mariyana, R., & Hadi, Moh. S. (2026). Teachers' Challenges in ICT Integration for Early Childhood Education: A Systematic Literature Review. *Aulad: Journal on Early Childhood*, 9(1), 104–122. <https://doi.org/10.31004/aulad.v9i1.1500>
- Javornik, Špela., & Mirazchiyski, E. Klemenčič. (2023). Factors Contributing to School Effectiveness: A Systematic Literature Review. *Eur. J. Investig. Health Psychol. Educ.*, 13(10), 2095–2111. <https://doi.org/10.3390/ejihpe13100148>
- Karmila, N., & Suchyadi, Y. (2020). Supervisi Pendidikan Di Sekolah Alam Bogor. *JPPGuseda | Jurnal Pendidikan & Pengajaran Guru Sekolah Dasar*, 3(1), 31–33. <https://doi.org/10.33751/jppguseda.v3i1.2011>
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Med Teach*, 42(8), 846–854. <https://doi.org/10.1080/0142159X.2020.1755030>
- Kolb, A. Y., & Kolb, D. A. (2021). *The Kolb Experiential Learning Profile: A Guide to Experiential Learning Theory, KELP Psychometrics and Research on Validity*. EBL Press.
- Kolb, D. A. (1984). *Experiential Learning: Experience As The Source Of Learning And Development*. Prentice Hall.
- Mabotha, P. A. P., & Ngcamu, B. S. (2026). Digital Transformation in the Higher Education Sector: A Systematic Literature Review. *Administrative Sciences*, 16(1), 1. <https://doi.org/10.3390/admsci16010001>
- Madhakomala, R., Hakim, M. A., Syifauzzuhrah, N., Jakarta, U. N., & Jakarta, E. (2022). Problems Of Education In Indonesia And Alternative. *International Journal of Business, Law, and Education*, 3(2), 135–144.
- Maisyaroh, Budi Wiyono, B., Hardika, Valdez, A. V., Mangorsi, S. B., & Canapi, S. P. T. (2021). The implementation of instructional supervision in Indonesia and the Philippines, and its effect on the variation of teacher learning models and materials. *Cogent Education*, 8(1). <https://doi.org/10.1080/2331186X.2021.1962232>

- Maqfirah, Z., Seena, I., Usman, N., & Ismail, I. (2026). Enhancing Job Satisfaction: The Role of Transformational Leadership and Motivation in Schools. *Attaqwa: Jurnal Ilmu Pendidikan Islam*, 22(2), 149–161. <https://doi.org/10.54069/attaqwa.v22i2.1151>
- Martinez-Garcia, C., Resilla, C. A., & Combs, J. P. (2025). Effective Principals in 2025 from the Lens of the Supervisor. *School Leadership Review*, 20(1), 1.
- Mensah, E. K., Saayir, P. T., & Kwao Tettey, R. (2025). The nexus between instructional effectiveness of teachers and students' academic performance: A survey on senior high school accounting teachers. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2476287>
- Mhlanga, D. (2023). Digital Transformation Education, Opportunities, and Challenges of the Application of ChatGPT to Emerging Economies. *Education Research International*, 2023. <https://doi.org/10.1155/2023/7605075>
- Mirza, H., Bellalem, F., & Mirza, C. (2023). Ethical Considerations in Qualitative Research: Summary Guidelines for Ethical Considerations in Qualitative Research: Summary Guidelines for Novice Social Science Researchers. *Social Studies and Research Journal*, 11(1), 441–449.
- Mulyanti, D. (2023). Educational Supervision to Improve Teachers' Learning Quality and Performance in the New Normal Era. *Al-Islah: Jurnal Pendidikan*, 15(3), 3749–3755. <https://doi.org/10.35445/alishlah.v15i3.3780>
- Murza, C. I., Ar, M., & Usman, N. (2025). School Supervisors as Key in Improving the Managerial Competencies of Principals and Teachers in Aceh Besar. *Tafkir: Interdisciplinary Journal of Islamic Education*, 6(4), 1156–1168. <https://doi.org/10.31538/tijie.v6i4.1800>
- Ngatini, N., Kusumaningsih, W., Nurkolis, N., & Baldemor, M. R. (2025). Influence of Instructional Leadership and Academic Supervision on The Quality of Learning. *IJORER: International Journal of Recent Educational Research*, 6(2), 602–614.
- Ntim, S. Y., Qin, J., Antwi, C. O., Aboagye, M. O., Chen, S., & Mensah, E. T. (2023). Early childhood educators' emotional labor and burnout in an emerging economy: The mediating roles of affective states. *Heliyon*, 9(3), e14053. <https://doi.org/10.1016/j.heliyon.2023.e14053>
- Nurulita, N. D., Prestiadi, D., & Imron, A. (2021). Education Supervision as A Teacher Professionalism Improvement. *Proceedings of the 1st International Conference on Continuing Education and Technology (ICCOET 2021)*, 589. <https://doi.org/10.2991/assehr.k.211101.025>
- Oakley, G., Pegrum, M., & Johnston, S. (2014). Introducing e-portfolios to pre-service teachers as tools for reflection and growth: Lessons learnt. *Asia-Pacific Journal of Teacher Education*, 42(1), 36–50. <https://doi.org/10.1080/1359866X.2013.854860>
- OECD. (2025). *Results from TALIS 2024: The State of Teaching*. <https://doi.org/10.1787/90df6235-en>
- Onodera, T. (2026). Teacher Well-Being Across Career Stages: An Ecological Study of Early- and Mid-Career English Teachers in Japanese Secondary Schools. *International Journal of Applied Linguistics*. <https://doi.org/10.1111/ijal.70150>
- Peng, J., Dai, Y., & Li, Y. (2024). Integrating online training and knowledge sharing among teachers through a cloud-based video platform. *Knowledge Management & E-Learning*, 16(4), 671–696. <https://doi.org/10.34105/j.kmel.2024.16.031>
- Plekhanov, D., Franke, H., & Netland, T. H. (2023). Digital transformation: A review and research agenda. *European Management Journal*, 41(6), 821–884. <https://doi.org/10.1016/j.emj.2022.09.007>
- Prakasvudhisarn, K., Wiriyanon, T., & Kamtab, P. (2025). Developing an Integrated Digital Technology-based Instructional Supervision Model to Enhance the Strategic Coaching Competencies of Supervising Instructors and Mentor Teachers. *Suranaree Journal of Social Science*, 19(1), 0–23. <https://doi.org/10.55766/sjss253957>
- Pratiwi, A. S., Rahmawati, S., Wulandari, A., 'Ilmi, A. M., & Bin Wan Jaafar, W. M. (2025). Development of Micro-Learning Content to Enhance Mental Health Knowledge among Candidate Counselors. *2025 11th International Conference on Education and Technology (ICET)*, 346–351. <https://doi.org/10.1109/ICET67257.2025.11291024>
- Pribadi, F. (2023). Implementation Of Technology-Based Clinical Supervision To Enhance Teacher. *Proceeding of 1st International Conference on Education, Society and Humanity*, 01(01), 1635–1641.

- Puroila, A.-M., Kupila, P., & Pekkarinen, A. (2021). Multiple facets of supervision: Cooperative teachers' views of supervision in early childhood teacher education practicums. *Teaching and Teacher Education*, 105(103413). <https://doi.org/10.1016/j.tate.2021.103413>
- Quinco-cadosales, M. N., Bacus, R. C., Abao, E. L., Boholano, H. B., & Dayagbil, F. T. (2024). Online Instructional Supervision in an Advanced Higher Education. *International Journal of Learning, Teaching and Educational Research*, 23(10), 395–414.
- Raberi, A., Fitria, H., & Fitriani, Y. (2020). Pengaruh Supervisi Kepala Sekolah dan Peran Komite Sekolah Terhadap Kinerja Guru. *Jurnal Al-Qiyam*, 1(2), 11–20.
- Rees, C. E., Lee, S. L., Huang, E., Denniston, C., Edouard, V., Pope, K., Sutton, K., Waller, S., Ward, B., & Palermo, C. (2020). Supervision training in healthcare: A realist synthesis. *Adv Health Sci Educ Theory Pract*, 25(3), 523–561. <https://doi.org/10.1007/s10459-019-09937-x>
- Reid, J. W., Hardee, A. B., Criswell, B. A., Elrod, M., Berryhill Jr., S. B., & Rushton, Gregory, T. (2025). Empowering teacher leaders: The role of research in changing teacher leaders' sense of themselves as professionals. *International Journal of Leadership in Education*, 28(4), 758–801. <https://doi.org/10.1080/13603124.2022.2045629>
- Rothwell, C., Kehoe, A., Farook, S. F., & Illing, J. (2021). Enablers and barriers to effective clinical supervision in the workplace: A rapid evidence review. *BMJ Open*, 11(9), e052929. <https://doi.org/10.1136/bmjopen-2021-052929>
- Rugaiyah. (2016). Pengembangan Model Supervisi Klinis Berbasis Informasi dan Teknologi. *Jurnal Cakrawala Pendidikan* 35 No. 3: H.422.
- Ruslin, R., Masjiri, S., Rasak, M. S. A., Alhabsyu, & Syam, H. (2022). Semi-structured Interview: A Methodological Reflection on the Development of a Qualitative Research Instrument in Educational Studies. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 12(1), 22–29. <https://doi.org/10.9790/7388-1201052229>
- Safitri, D., & Nurfuadi, N. (2025). The impact of good classroom management on students' attitudes in Islamic Religious Education learning. *Attaqwa: Jurnal Ilmu Pendidikan Islam*, 21(2), 121–133. <https://doi.org/10.54069/attaqwa.v21i2.974>
- Sandoval-Obando, E., Fuentes-Vilugrón, G., Castellanos-Alvarenga, L., Etchegaray-Pezo, P., & Lamas-Aicon, M. (2026). Teaching Engagement and Technostress Among Primary and Secondary School Teachers: A Systematic Review. *Educ. Sci.*, 16(3), 422. <https://doi.org/10.3390/educsci16030422>
- Sapwa, A., Meirawan, D., & Saton, D. A. N. (2025). The Role of digital supervision in enhancing teacher performance in Indonesian secondary education. *Indonesian Research Journal in Education (IRJE)*, 9(1), 495–508.
- Sermal, S., & Yunus, M. (2025). Bridging Technology and Pedagogy: A Study on Virtual Academic Supervision for Teacher Professional Growth. *AL-ISHLAH: Jurnal Pendidikan*, 17(2), 1844–1853. <https://doi.org/10.35445/alishlah.v17i2.7207>
- Shabur, A., Amadi, M., & Anwar, N. (2023). Ragam Pendekatan dalam Supervisi Pendidikan. *Jurnal Pendidikan Tambusai*, 7(3), 22026–22033.
- Shi, Y. R., Sin, K. F. K., & Wang, Y. Q. (2025). Teacher professional development of digital pedagogy for inclusive education in post- pandemic era: Effects on teacher competence, self-efficacy, and work well-being. *Teaching and Teacher Education*, 168(105230). <https://doi.org/10.1016/j.tate.2025.105230>
- Song, Y., Lv, S., Wang, M., Wang, Z., & Dong, W. (2025). The Impact of Digital Learning Competence on the Academic Achievement of Undergraduate Students. *Behav Sci (Basel)*, 15(7), 840. <https://doi.org/10.3390/bs15070840>
- Stalter, K. (2026). *Exploring Virtual Supervision In Student Teaching: A Qualitative Case Study Of Nontraditional Students' Experiences And Challenges*. Bradley University.
- Stavermann, K. (2025). Online Teacher Professional Development: A Research Synthesis on Effectiveness and Evaluation. *Tech Know Learn*, 30, 203–240. <https://doi.org/10.1007/s10758-024-09792-9>

- Sujadi, E., Meditamar, O., Martunus, W., & Utama, R. P. (2019). Pengaruh Supervisi Kepala Sekolah Terhadap Kinerja Guru. *Jurnal Literasiologi*, 1(2), 89–99.
- Trust, T., Carpenter, J. P., & Krutka, D. G. (2017). Moving beyond silos: Professional learning networks in higher education. *The Internet and Higher Education*, 35, 1–11. <https://doi.org/10.1016/j.iheduc.2017.06.001>
- Vila, O. (2024). Peran Guru Dalam Meningkatkan Kemampuan kognitif Pada Anak Usia Dini Usia (5-6 Tahun Di Paud Areng Koe. *Jurnal Kajian Ilmiah Interdisiplinier*, 8(1), 500–506.
- Wiyono, B. B., & Rasyad, A. (2021). *The Effect of Collaborative Supervision Approaches and Collegial Supervision Techniques on Teacher Intensity Using Performance-Based Learning*. <https://doi.org/10.1177/21582440211013779>
- Wolfe, Z., Knudsen, K.-K., & Mahaffey, A. (2023). Distribution of Instructional Leadership Roles within a School Organization. *Leadership in Teaching and Learning*, 15(1), 21–30. <https://doi.org/10.14305/jn.19440413.2023.15.1.02>
- Wulandari, A., Krismona, E. B., Andrianie, S., Bariyyah, K., & Soejanto, L. T. (2026). Technical comment on Gómez-Leal, R., Fernandez-Berrocal, P., and Megías-Robles, A. (2026): When feeling too much hurts: Emotional intelligence profiles and their implications for mental health. *Personality and Individual Differences*, 263(114010). <https://doi.org/10.1016/j.paid.2026.114010>
- Wulandari, A., Zahra, S. A. M., Pambudi, P. R., Andrianie, S., Bariyyah, K., Rahayu, D. S., & Setyorini. (2026). Beyond moderation: Parenting as a regulatory system in the sleep–obesity link. *Journal of Clinical Sleep Medicine*, 22(1), 85. <https://doi.org/10.1007/s44470-026-00104-9>
- Yang, B., Song, S., Zhang, L., & Xu, C. (2025). The relationship between resilience and professional well-being among early childhood teachers: The chain mediating role of teacher pedagogical competence and self-efficacy. *BMC Psychology*, 13(1), 1077. <https://doi.org/10.1186/s40359-025-03227-5>
- Yang, T., & Dong, C. (2024). What influences teachers' implementation of ICT in early childhood education? A qualitative exploration based on an ecological-TPACK framework. *Computers and Education Open*, 7(100228). <https://doi.org/10.1016/j.caeo.2024.100228>
- Yelizarova, O., Stankevych, T., Parats, A., Yelizarov, V., Puzanova, O., Lebedynets, N., & Hozak, S. (2025). Digital Exposure in Early Childhood: Health Risks and Protective Strategies During Remote Learning. *Inquiry*, 62(469580251390766). <https://doi.org/10.1177/00469580251390766>
- Yusinta, M., & Nirwana, E. S. (2025). Peran Guru Dalam Meningkatkan Nilai Moral Pada Anak Melalui Ber cerita Dengan Media Boneka Tangan Di Paud Delima Kota Bengkulu. *Jurnal Ilmiah Wahana Pendidikan*, 11(2.C), 235–249.
- Zackariasson, M., & Magnusson, J. (2024). Emotional Dimensions of Supervision. In *Supervising Student Independence*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-031-66371-0_5
- Zembylas, M. (2005). Discursive practices, genealogies, and emotional rules: A poststructuralist view on emotion and identity in teaching. *Teaching and Teacher Education*, 21(8), 935–948. <https://doi.org/10.1016/j.tate.2005.06.005>
- Zhou, Q., Ma, H., Zhu, M., Chen, H., & Gong, Q. (2025). Shadows and light: Navigating teachers' time poverty and blended teaching acceptance with social support and job satisfaction in EFL teachers' voyage. *BMC Psychology*, 13(1), 551. <https://doi.org/10.1186/s40359-025-02910-x>