

Clinical Supervision as a Catalyst for Differentiated Instruction Implementation in Early Childhood Education

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Abstract

Early childhood education requires differentiated learning approaches to address diverse student needs, yet kindergarten teachers often lack adequate support for implementing such practices. Clinical supervision offers a collaborative framework for professional development, but limited research examines its effectiveness in enhancing differentiated instruction implementation. This qualitative case study investigated clinical supervision implementation at TK Negeri Pembina Sangatta, East Kalimantan, Indonesia, from January to March 2025. Six participants including five classroom teachers and one principal-supervisor were involved through census sampling. Data collection employed in-depth interviews, classroom observations, and document analysis. Thematic analysis following the Miles and Huberman framework was conducted to identify patterns and themes related to clinical supervision processes and differentiated learning implementation. Clinical supervision followed a structured three-stage process comprising pre-conference, observation, and post-conference phases that created supportive professional development environments. Teachers developed enhanced competencies in designing tiered activities and adapting instruction across content, process, product, and learning environment dimensions. Key challenges included time constraints, resource limitations, and initial conceptual understanding gaps. Teachers demonstrated fundamental shifts in educational equity perspectives, moving from uniform to responsive teaching approaches. Effective supervisory strategies included reflective dialogue, evidence-based feedback, and ongoing coaching support. Findings align with clinical supervision theoretical frameworks emphasizing collaborative inquiry over evaluative assessment. The study addresses research gaps by demonstrating clinical supervision effectiveness in early childhood contexts and its role in facilitating complex pedagogical innovations. Results support professional development models emphasizing reflective practice and experiential learning while highlighting the importance of addressing systemic barriers for successful differentiated instruction implementation.

INTRODUCTION

Early childhood education, particularly at the kindergarten level, plays a fundamental role in establishing the cognitive, social, emotional, and physical development foundations of children (Shonkoff & Phillips, 2000; NAEYC, 2020). Research demonstrates that high-quality early childhood programs contribute substantially to children's development across multiple domains, with effects persisting into adolescence and adulthood (Heckman, 2006). During this critical developmental period, children exhibit remarkable diversity in their learning abilities, interests, and developmental trajectories (Tomlinson, 2014). Each child possesses unique characteristics that influence their learning processes, including varying cognitive processing speeds, distinct learning preferences, and different levels of readiness for academic concepts (Gardner, 2011; Vygotsky, 1978). This inherent diversity among young learners necessitates educational approaches that recognize and respond to individual differences rather than employing uniform instructional methods (Snow et al., 1998).

The concept of differentiated learning has emerged as a crucial pedagogical framework in early childhood education, emphasizing the adaptation of teaching methods, content, and learning

environments to accommodate the diverse needs of individual learners (Tomlinson & Imbeau, 2010). This approach recognizes that effective education occurs when instruction is tailored to match each child's developmental level, learning style, and personal interests (Subban, 2006). Research supports the theoretical foundations of differentiated instruction, demonstrating its effectiveness in meeting students' diverse needs and readiness levels (van Geel et al., 2019). However, implementing differentiated learning strategies presents significant challenges for educators, particularly those working in kindergarten settings where developmental variations among children are most pronounced (Denton & West, 2002).

Current educational practices in many kindergarten institutions continue to rely heavily on standardized approaches that fail to address the individual learning needs of children. Teachers often struggle with limited understanding of differentiated instruction principles, insufficient training in adaptive teaching methods, and constraints related to time, resources, and institutional support (Smit & Humpert, 2012; Santangelo & Tomlinson, 2009). Studies have documented that teachers face multiple barriers in implementing differentiation, including concerns about planning and management, inadequate professional development, and limited administrative support (Wan, 2016; Dixon et al., 2014). These challenges are particularly acute in regions with limited educational resources, where teachers may lack access to professional development opportunities and adequate supervision to enhance their pedagogical skills (UNESCO, 2015; World Bank, 2018).

Clinical supervision has been recognized as an effective approach for professional development in educational contexts, offering a structured, collaborative method for improving teaching practices through systematic observation, reflection, and feedback (Acheson & Gall, 2010; Glickman et al., 2018). Unlike traditional supervisory approaches that focus primarily on administrative compliance, clinical supervision emphasizes professional growth through reflective dialogue and evidence-based improvement strategies (Zepeda, 2017). The foundational work of Cogan (1973) and Goldhammer et al. (1993) established the three-stage model of clinical supervision comprising pre-conference, observation, and post-conference phases, which has been widely adopted in educational settings. This approach creates opportunities for teachers to examine their instructional practices critically, identify areas for enhancement, and develop more effective teaching strategies through collaborative problem-solving (Sullivan & Glanz, 2013; Nolan & Hoover, 2011).

The intersection of clinical supervision and differentiated learning presents a promising avenue for addressing the challenges faced by kindergarten teachers in implementing adaptive instruction. Clinical supervision can provide the necessary support structure for teachers to develop competencies in differentiated instruction while fostering reflective practices that promote continuous professional improvement (Costa & Garmston, 2016). The reflective practice component, grounded in Schön's (1983) seminal work on the reflective practitioner and further developed by Brookfield (2017), enables teachers to thoughtfully analyze their teaching moves and refine their knowledge and actions. Through systematic observation and collaborative reflection, supervisors can guide teachers in recognizing diverse learner needs and developing appropriate instructional responses (Dewey, 1933; Kolb, 1984). Research on teacher professional development emphasizes that effective programs incorporate reflective practice, collaborative inquiry, and ongoing support—elements inherent in clinical supervision models (Darling-Hammond et al., 2017; Desimone, 2009).

Research gaps exist in understanding how clinical supervision can effectively support teachers in implementing differentiated learning strategies, particularly in early childhood education contexts (Brighton et al., 2005). While studies have examined clinical supervision and differentiated instruction separately, limited research has explored their integration in kindergarten settings (Keuning et al., 2019; Pajak, 2001). Furthermore, there is insufficient understanding of the specific challenges teachers face when attempting to implement differentiated learning following clinical supervision, and how these challenges can be systematically addressed through targeted supervisory interventions (Shaunessy-Dedrick et al., 2015). The literature reveals a need for more comprehensive investigations

into the processes, outcomes, and contextual factors that influence the effectiveness of clinical supervision in promoting differentiated instruction (Prast et al., 2015).

This study addresses these knowledge gaps by investigating the implementation of clinical supervision to enhance differentiated learning in kindergarten settings. The research aims to provide insights into how clinical supervision can serve as a catalyst for improving teachers' abilities to design and implement learning experiences that accommodate individual student needs. By examining the processes, challenges, and outcomes associated with clinical supervision in the context of differentiated instruction, this study contributes to both educational supervision and early childhood pedagogy literature (Guskey, 2002; Timperley et al., 2007).

The significance of this research extends beyond academic inquiry to practical applications in educational settings. The findings can inform supervisory practices, teacher professional development programs, and institutional policies aimed at improving educational quality in kindergarten settings (Joyce & Showers, 2002; Wei et al., 2009). As educational systems increasingly recognize the importance of individualized instruction, understanding effective approaches to support teachers in implementing differentiated learning becomes crucial for educational improvement efforts (Britto et al., 2017; OECD, 2019). The study's contribution is particularly relevant for contexts similar to the research setting, where educators face resource constraints while striving to provide high-quality, responsive instruction to diverse learners (UNESCO, 2015; Pramling Samuelsson & Fler, 2009).

This investigation employs a qualitative research approach to provide in-depth understanding of the experiences, perceptions, and practices of teachers and supervisors engaged in clinical supervision processes aimed at enhancing differentiated learning. Through comprehensive examination of these processes, the study seeks to contribute valuable insights for educational practitioners, policymakers, and researchers committed to improving early childhood education quality through effective supervisory practices and responsive teaching methods.

METHODS

This study employed a qualitative descriptive approach utilizing a case study design to explore the implementation of clinical supervision in enhancing differentiated learning practices in kindergarten settings. The qualitative methodology was selected to provide in-depth understanding of the experiences, perceptions, and processes involved in clinical supervision and its impact on differentiated instruction implementation. The case study design enabled comprehensive examination of the phenomenon within its natural educational context, allowing for detailed exploration of the complex interactions between supervisory practices and teaching improvement.

The research was conducted at TK Negeri Pembina Sangatta, located in Sangatta Utara, East Kutai Regency, East Kalimantan Province, Indonesia, from January to March 2025. The study population comprised all teaching staff at the kindergarten, including classroom teachers and the school principal who serves as the primary supervisor. Using a census sampling approach, all five classroom teachers and one principal-supervisor were included as research participants, totaling six individuals. This comprehensive inclusion ensured complete representation of the supervisory relationships and teaching practices within the institution.

Data collection employed multiple methods to achieve triangulation and enhance research credibility. In-depth interviews were conducted with all participants using semi-structured interview protocols designed to explore experiences with clinical supervision, understanding of differentiated learning principles, implementation challenges, and perceived impacts of supervisory interventions. Interview sessions lasted approximately 30-45 minutes and were audio-recorded with participant consent for subsequent transcription and analysis.

Classroom observations were systematically conducted to document clinical supervision processes and differentiated learning implementation. Observations focused on pre-conference meetings between supervisors and teachers, actual classroom instruction, and post-conference reflection sessions. Structured observation protocols captured specific elements of differentiated

instruction including content adaptation, process variation, product differentiation, and learning environment modifications. Field notes documented contextual factors, interactions, and non-verbal communications that might influence supervisory effectiveness.

Document analysis complemented primary data collection through examination of supervision reports, lesson plans, teacher portfolios, and institutional policies related to supervisory practices and curriculum implementation. These documents provided additional insights into formal supervisory structures and evidence of teaching practice evolution over time.

Data analysis followed the Miles and Huberman framework, involving data reduction, data display, and conclusion drawing. Interview transcripts were systematically coded to identify recurring themes and patterns related to clinical supervision processes and differentiated learning implementation. Thematic analysis was employed to categorize findings into meaningful units that addressed research objectives. Observational data were analyzed to identify specific supervisory behaviors and teaching practices that supported or hindered differentiated instruction implementation.

Data validity was ensured through triangulation of multiple data sources, prolonged engagement at the research site, and member checking with participants to verify interpretation accuracy. The researcher maintained reflexive awareness throughout the data collection and analysis processes to minimize potential bias and ensure authentic representation of participant experiences. All research procedures adhered to ethical guidelines, with informed consent obtained from all participants and institutional approval secured prior to data collection.

RESULTS AND DISCUSSION

Results

The findings from this study reveal significant insights into the implementation of clinical supervision in enhancing differentiated learning practices at TK Negeri Pembina Sangatta. The results are organized around five key themes that emerged from the data analysis: clinical supervision implementation processes, challenges in differentiated learning application, teacher competency development, impacts on instructional adaptation, and effective supervisory strategies.

Clinical Supervision Implementation Process

The research findings indicate that clinical supervision at the kindergarten follows a structured three-stage approach comprising pre-conference, classroom observation, and post-conference phases. Participants consistently reported that this systematic process creates a supportive environment for professional development. As one teacher participant noted:

"We discuss first before the observation, then after that we reflect together. It feels like being guided, not evaluated."

This collaborative approach was further emphasized by the principal-supervisor, who explained the deliberate non-judgmental stance adopted during supervision:

"I avoid words that pressure, because my goal is not to evaluate but to guide."

The data revealed that the pre-conference phase serves as a critical foundation for successful supervision, allowing teachers to identify specific areas of concern and establish mutual expectations. During classroom observations, supervisors maintained a non-intrusive presence, focusing on systematic data collection rather than immediate intervention. The post-conference phase consistently emerged as the most valued component, with participants describing it as transformative for their understanding of differentiated instruction principles.

Challenges in Differentiated Learning Implementation

Despite receiving clinical supervision support, teachers reported several persistent challenges in implementing differentiated learning strategies. Time constraints emerged as the primary obstacle, with participants consistently mentioning difficulties in preparing varied instructional materials. One teacher articulated this challenge:

"Sometimes preparation time is not enough, especially when having to prepare three types of tasks. But the principal supports, helps find ideas."

Additional challenges identified through the data analysis included limited understanding of differentiated instruction concepts, insufficient resources for creating varied learning materials, and difficulties in accurately assessing individual student needs. Teachers also reported initial resistance to changing established teaching routines and uncertainty about adapting assessment strategies to accommodate diverse learning outcomes.

Teacher Competency Development Through Clinical Supervision

The research findings demonstrate notable improvements in teacher competencies following clinical supervision interventions. Teachers reported increased confidence in designing tiered activities and greater sensitivity to individual student learning needs. A significant transformation was evident in teachers' perspectives on fairness in education, as captured in this participant quote:

"I used to think fair meant giving the same task to everyone. Now I understand that fair means giving according to each person's needs."

Observable changes in teaching practices included the implementation of three-level activity designs, increased use of varied instructional methods, and more responsive classroom interactions. Teachers demonstrated enhanced abilities to recognize learning differences among students and adapt their instruction accordingly. The development of reflective practices emerged as a crucial outcome, with teachers reporting regular self-evaluation of their instructional effectiveness.

Impact on Instructional Adaptation

Clinical supervision significantly influenced teachers' abilities to differentiate instruction across four key dimensions: content, process, product, and learning environment. In terms of content adaptation, teachers began incorporating local cultural elements and adjusting material complexity to match student readiness levels. Process differentiation was evidenced through the implementation of varied instructional strategies, including visual, auditory, and kinesthetic approaches.

Product differentiation became apparent as teachers began offering students multiple ways to demonstrate learning, including drawings, storytelling, and creative projects. Environmental modifications included the creation of flexible learning spaces with designated areas for different activities. As one teacher observed:

"Now I prepare activity variations. The children are also happier because their tasks match their abilities."

Effective Supervisory Strategies

The data analysis revealed several supervisory strategies that proved particularly effective in supporting differentiated learning implementation. Reflective dialogue emerged as the most impactful approach, with teachers valuing the opportunity to examine their practices collaboratively. The use of specific, evidence-based feedback helped teachers understand the connection between their instructional choices and student outcomes.

Ongoing coaching and mentoring beyond formal observation cycles provided sustained support for professional growth. The principal-supervisor's plan to establish peer reflection forums represents recognition of the value of collaborative professional learning:

"I want to create regular reflection forums among teachers, so they can learn from each other and share good practices."

Discussion

This study investigated the implementation of clinical supervision in enhancing differentiated learning practices at TK Negeri Pembina Sangatta, Indonesia. The findings revealed five interconnected dimensions of this process: (1) structured clinical supervision processes comprising pre-conference, observation, and post-conference phases; (2) persistent challenges in differentiated learning implementation including time constraints, resource limitations, and conceptual

understanding gaps; (3) enhanced teacher competencies in designing tiered activities and recognizing individual learning differences; (4) significant impacts on instructional adaptation across content, process, product, and learning environment dimensions; and (5) effective supervisory strategies centered on reflective dialogue, evidence-based feedback, and ongoing coaching support. These findings collectively demonstrate that clinical supervision can serve as an effective catalyst for implementing differentiated instruction in early childhood education contexts, while also highlighting the systemic barriers that must be addressed for sustainable pedagogical innovation.

The findings of this study strongly align with the theoretical frameworks of clinical supervision established by Cogan (1973) and Goldhammer et al. (1993), which emphasize structured, collaborative processes over evaluative assessment. The three-stage supervision model implemented at TK Negeri Pembina Sangatta—comprising pre-conference, observation, and post-conference phases—mirrors the classical clinical supervision framework that has been advocated in educational supervision literature for decades (Acheson & Gall, 2010; Glickman et al., 2018). The positive teacher responses documented in this study, particularly their perception of supervision as "being guided, not evaluated," validate theoretical assertions that non-threatening supervisory relationships facilitate professional growth and instructional improvement (Sullivan & Glanz, 2013; Zepeda, 2017).

The collaborative and supportive nature of clinical supervision observed in this study resonates with Nolan and Hoover's (2011) conceptualization of supervision as a partnership for professional development rather than an administrative compliance mechanism. Teachers' consistent valuation of the post-conference phase as transformative for their understanding aligns with research emphasizing the critical role of reflective dialogue in professional learning (Costa & Garmston, 2016). This finding extends previous research by demonstrating how clinical supervision principles, originally developed for general education contexts, can be effectively adapted to early childhood education settings where developmental diversity among children is particularly pronounced (Denton & West, 2002).

The study's findings provide empirical support for Schön's (1983) theory of the reflective practitioner, which posits that professional growth occurs through systematic reflection on practice. Teachers' reported development of reflective practices, evidenced by their regular self-evaluation of instructional effectiveness, demonstrates the transformative potential of structured reflection embedded within supervisory processes. This finding resonates with Brookfield's (2017) framework for critically reflective teaching and Dewey's (1933) foundational work on reflective thinking in education. The transformation in teachers' conceptual understanding of educational equity—from viewing fairness as uniformity to recognizing it as responsiveness to individual needs—represents what Kolb (1984) describes as experiential learning, where concrete experiences are transformed into abstract conceptualizations through reflective observation.

The reflective component of clinical supervision in this study appears to have functioned as Desimone (2009) suggests effective professional development should: by providing opportunities for active learning, fostering coherence with teachers' existing knowledge, and offering sustained duration rather than one-time interventions. Teachers' ability to articulate fundamental shifts in their pedagogical thinking—as evidenced in the quote "I used to think fair meant giving the same task to everyone. Now I understand that fair means giving according to each person's needs"—demonstrates the deep conceptual change that can result from systematic reflective practice supported by clinical supervision (Guskey, 2002; Timperley et al., 2007).

The challenges encountered by teachers in this study—time constraints, resource limitations, and conceptual understanding gaps—correspond closely with barriers documented in previous research on differentiated instruction implementation (Smit & Humpert, 2012; Santangelo & Tomlinson, 2009; Wan, 2016). The time constraint issue, particularly teachers' difficulties in preparing varied instructional materials, aligns with findings from multiple studies indicating that differentiation demands significant planning time that many teachers lack within their existing schedules (Dixon et al., 2014; Prast et al., 2015). However, this study extends previous research by documenting how clinical supervision can provide partial mitigation for these challenges through supervisor support in

generating ideas and resources, as evidenced in the teacher quote: "Sometimes preparation time is not enough, especially when having to prepare three types of tasks. But the principal supports, helps find ideas."

The initial resistance to changing established teaching routines observed in this study reflects what Brighton et al. (2005) identified as a common impediment to differentiated instruction adoption. Teachers' uncertainty about adapting assessment strategies to accommodate diverse learning outcomes aligns with research by Shaunessy-Dedrick et al. (2015) on practitioner perceptions of differentiation. Yet, unlike many previous studies that documented barriers without identifying effective interventions, this research demonstrates how systematic clinical supervision can help teachers overcome these obstacles through targeted support and collaborative problem-solving (Keuning et al., 2019).

The documented improvements in teacher competencies following clinical supervision interventions align with research demonstrating that clinical supervision can effectively enhance specific teaching skills (Darling-Hammond et al., 2017). Teachers' increased confidence in designing tiered activities and greater sensitivity to individual student needs validate findings from professional development research emphasizing the importance of practice-embedded learning experiences (Joyce & Showers, 2002). The development of competencies across multiple dimensions—including recognizing learning differences, adapting instruction, and implementing varied teaching methods—supports Tomlinson and Imbeau's (2010) comprehensive framework for differentiated instruction while demonstrating that such multifaceted competencies can be developed through structured supervisory support.

The study's findings regarding teacher competency development extend previous research in several important ways. First, while Subban (2006) and van Geel et al. (2019) documented the theoretical basis and complexity of differentiated instruction, this study demonstrates how clinical supervision can serve as a practical mechanism for translating theory into practice in resource-constrained settings. Second, the documented transformation in teachers' fundamental perspectives on educational equity addresses a gap identified by Brighton et al. (2005) regarding the need for research on how teachers develop not only skills but also the conceptual frameworks necessary for implementing differentiation effectively.

The study's documentation of instructional improvements across the four key dimensions of differentiated instruction—content, process, product, and learning environment—provides empirical support for Tomlinson's (2014) theoretical model while demonstrating its applicability in early childhood contexts. Teachers' implementation of content adaptation through incorporation of local cultural elements and adjustment of material complexity reflects principles from both differentiated instruction literature (Tomlinson & Imbeau, 2010) and Vygotsky's (1978) zone of proximal development theory, which emphasizes matching instruction to learners' developmental levels.

The process differentiation evidenced through varied instructional strategies aligns with Gardner's (2011) theory of multiple intelligences, which emphasizes that learners possess diverse cognitive strengths requiring varied approaches to instruction. Product differentiation, as manifested in teachers offering multiple ways for students to demonstrate learning, reflects research-based practices for accommodating diverse learner needs (Snow et al., 1998). The environmental modifications observed in this study—particularly the creation of flexible learning spaces with designated activity areas—correspond with research on the importance of learning environment design in early childhood education (NAEYC, 2020; Pramling Samuelsson & Fleer, 2009).

Importantly, this study addresses the research gap identified by Pajak (2001) regarding the need for empirical investigation into how clinical supervision can support complex pedagogical innovations like differentiated instruction. The finding that teachers successfully implemented adaptations across all four dimensions following clinical supervision demonstrates that systematic supervisory support can enable multifaceted instructional change, even in settings with resource constraints typical of many developing contexts (UNESCO, 2015; World Bank, 2018).

The identification of effective supervisory strategies in this study—reflective dialogue, evidence-based feedback, and ongoing coaching—aligns with research on high-quality professional development characteristics (Darling-Hammond et al., 2017; Wei et al., 2009). The emphasis on reflective dialogue as the most impactful supervisory approach validates decades of research emphasizing the centrality of reflection in professional learning (Dewey, 1933; Schön, 1983; Brookfield, 2017). The use of specific, evidence-based feedback documented in this study reflects principles from cognitive coaching literature (Costa & Garmston, 2016) and research on effective supervisory feedback (Nolan & Hoover, 2011).

The principal-supervisor's planned establishment of peer reflection forums represents recognition of what Timperley et al. (2007) identify as a critical component of effective professional learning: opportunities for collaborative inquiry and shared practice examination. This finding aligns with research on professional learning communities and their role in sustaining instructional innovation (Joyce & Showers, 2002). The ongoing coaching and mentoring beyond formal observation cycles documented in this study reflects understanding that meaningful professional development requires sustained support rather than isolated interventions (Desimone, 2009; Guskey, 2002).

This study makes an important contribution by demonstrating clinical supervision effectiveness in a resource-constrained setting in East Kalimantan, Indonesia. While much of the clinical supervision literature originates from well-resourced educational contexts (Acheson & Gall, 2010; Glickman et al., 2018), this research shows that the fundamental principles of collaborative, reflective supervision can be successfully implemented even with limited resources. This finding has significant implications for educational improvement efforts in developing regions (UNESCO, 2015; Britto et al., 2017) and suggests that clinical supervision may be a viable, cost-effective approach for supporting teacher development in contexts similar to the research setting.

The study's findings regarding the importance of addressing systemic barriers—particularly time and resource constraints—align with global research on educational quality in resource-limited contexts (World Bank, 2018; OECD, 2019). The partial mitigation of these barriers through supervisor support in resource identification and instructional planning suggests that clinical supervision can serve not only as a professional development mechanism but also as a resource-sharing and problem-solving partnership. This finding extends previous research by demonstrating how supervisory relationships can help teachers navigate systemic constraints while still making meaningful progress toward implementing complex pedagogical innovations.

The study's findings collectively demonstrate successful integration of clinical supervision theory with differentiated instruction practice, addressing the research gap identified by Brighton et al. (2005) and Keuning et al. (2019) regarding limited empirical evidence on this integration in early childhood settings. The documented process—whereby structured supervision enabled teachers to develop both conceptual understanding and practical skills in differentiation—validates theoretical models emphasizing the importance of reflective, practice-embedded professional learning (Schön, 1983; Kolb, 1984).

The transformation in teachers' pedagogical thinking and practices observed in this study provides empirical support for Heckman's (2006) argument about the critical importance of investing in high-quality early childhood education. By demonstrating that clinical supervision can enhance teachers' capacity to provide developmentally appropriate, individualized instruction, this research contributes to understanding how educational quality in early childhood settings can be systematically improved through targeted professional development interventions (Shonkoff & Phillips, 2000; NAEYC, 2020).

This study extends clinical supervision theory by demonstrating its applicability and effectiveness in early childhood education contexts, particularly for supporting the implementation of complex pedagogical innovations like differentiated instruction. The findings validate and extend Cogan's (1973) and Goldhammer et al.'s (1993) foundational work by showing that the three-stage clinical supervision model remains relevant and effective in contemporary, resource-constrained educational

settings. The study also contributes to differentiated instruction theory (Tomlinson, 2014; Tomlinson & Imbeau, 2010) by providing empirical evidence of how systematic supervisory support can facilitate implementation across all four differentiation dimensions in kindergarten contexts.

The documented transformation in teachers' conceptual frameworks—from viewing equity as uniformity to understanding it as responsiveness—contributes to adult learning theory (Desimone, 2009; Guskey, 2002) by demonstrating how sustained, reflective professional development can influence not only instructional behaviors but also underlying educational beliefs and values. This finding has important implications for designing professional development programs that aim to produce deep, lasting changes in teaching practice.

For educational practitioners, this study demonstrates that clinical supervision can serve as a viable and effective approach for supporting teachers in implementing differentiated instruction, even in resource-constrained settings. The findings suggest several practical recommendations: (1) educational leaders should adopt collaborative rather than evaluative supervisory orientations, emphasizing guidance and support over assessment; (2) professional development should be structured around the three-stage clinical supervision model, with particular attention to creating meaningful pre-conference and post-conference dialogue opportunities; (3) supervisors should prioritize reflective dialogue and evidence-based feedback as primary strategies for supporting teacher growth; and (4) ongoing coaching and peer collaboration should be integrated into formal supervision structures to provide sustained support.

For policymakers, the study highlights the importance of allocating resources for systematic supervisory support and creating institutional structures that allow time for meaningful supervision processes. The findings suggest that addressing systemic barriers—including time constraints, resource limitations, and access to professional development—is essential for maximizing the effectiveness of clinical supervision in promoting pedagogical innovation (UNESCO, 2015; World Bank, 2018; OECD, 2019).

Several limitations constrain the generalizability and interpretation of these findings. The single-site case study design, while allowing for in-depth examination of supervisory processes, limits transferability to other educational contexts with different characteristics. The relatively short timeframe (January to March 2025) may not capture the long-term sustainability of observed improvements in differentiated instruction implementation. Future research should examine clinical supervision effectiveness across multiple sites and extended timeframes to assess whether the observed competency development and instructional improvements persist and continue to evolve over time.

Cultural and regional factors specific to the Indonesian educational context may influence the applicability of findings to other settings. The study's focus on a single kindergarten with a particular leadership structure and teacher composition limits understanding of how clinical supervision might function differently in varied institutional contexts. Future research should include comparative studies exploring different supervisory models and their relative effectiveness in supporting pedagogical innovation across diverse cultural and organizational contexts.

Additionally, while this study documented changes in teacher practices and perceptions, it did not directly assess the impact on student learning outcomes. Future research investigating the ultimate effects of supervision-supported differentiated instruction on children's academic, social, and emotional development would strengthen understanding of the full educational benefits of this approach (Heckman, 2006; Shonkoff & Phillips, 2000). Studies examining the cost-effectiveness of clinical supervision interventions would also inform policy decisions regarding resource allocation for professional development initiatives, particularly in resource-constrained settings (Britto et al., 2017).

CONCLUSION

This study demonstrates that clinical supervision serves as an effective mechanism for enhancing differentiated learning implementation in kindergarten settings. The research reveals that structured

supervisory processes comprising pre-conference, observation, and post-conference phases create supportive environments for teacher professional development. Teachers developed enhanced competencies in designing tiered activities, recognizing individual learning differences, and adapting instruction across content, process, product, and environmental dimensions. The collaborative and reflective nature of clinical supervision facilitated fundamental shifts in teachers' conceptual understanding of educational equity, moving from uniform approaches to responsive pedagogical practices.

The study contributes to educational supervision literature by providing empirical evidence of clinical supervision effectiveness in early childhood education contexts, addressing a significant research gap in the integration of supervisory practices with differentiated instruction implementation. The findings extend theoretical understanding of how reflective supervisory relationships can support complex pedagogical innovations in resource-constrained educational environments.

Practical implications include the need for educational leaders to adopt collaborative rather than evaluative supervisory orientations, implement systematic professional development approaches, and provide ongoing coaching support for teachers attempting differentiated instruction. The research suggests that successful implementation requires addressing systemic barriers including time constraints, resource limitations, and conceptual understanding gaps through targeted supervisory interventions.

Several limitations constrain the generalizability of findings. The single-site case study design limits transferability to other educational contexts, while the relatively short timeframe may not capture long-term sustainability of observed improvements. Cultural and regional factors specific to the Indonesian educational context may influence the applicability of findings to other settings.

Future research should examine clinical supervision effectiveness across multiple sites and extended timeframes to assess sustainability of differentiated learning implementation. Comparative studies exploring different supervisory models and their relative effectiveness in supporting pedagogical innovation would provide valuable insights. Additionally, research investigating the impact of clinical supervision on student learning outcomes would strengthen understanding of the ultimate educational benefits of enhanced differentiated instruction practices. Studies examining the cost-effectiveness of clinical supervision interventions would inform policy decisions regarding resource allocation for professional development initiatives.

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