International Journal of Evaluation and Research in Education (IJERE)
Vol. 15, No. 6, December 2026, pp. 5129~5146
ISSN: 2252-8822, DOI: 10.11591/ijere.v15i6.39631

Area-based supervision model for promoting equity-oriented instruction in multicultural classrooms: evidence from Chiang Mai Province, Thailand

Sarawut Chaiyong[1], Pisith Nasee[2], Omsin Jatuporn[2], Tharn Thong-Ngok[3]
[1]Program of Education (Development Education), Faculty of Education, Chiang Mai University, Chiang Mai, Thailand
[2]Division of Social Science Education, Department of Educational Foundations and Development, Faculty of Education, Chiang Mai University, Chiang Mai, Thailand
[3]Division of Educational Administration, Department of Educational Foundations and Development, Faculty of Education, Chiang Mai University, Chiang Mai, Thailand

Article Info

Article history:

Received Mar 20, 2026
Revised Jul 27, 2026
Accepted Aug 6, 2026

Keywords:

Area-based supervision
Culturally responsive teaching
Equity-oriented instruction
Instructional development
Multicultural education
Professional learning

ABSTRACT

This study aimed to develop, validate, and pilot an area-based supervision model designed to strengthen equity-oriented instructional practices in multicultural classrooms in Chiang Mai Province, Thailand. We employed a qualitative design-oriented research approach across two sequential phases over a period of 24 months from November 2023 to October 2025. Phase 1 involved contextual analysis through document review, semi-structured interviews (n=47), and classroom observations (n=30). Phase 2 focused on model development, expert validation (n=8), and pilot implementation involving seven classroom teachers and one school principal (n=8) over 13 weeks using complete supervision cycles. Data were analyzed using thematic analysis following Braun and Clarke's six-phase approach. The supervision model was rated as most appropriate across six dimensions (21 items), with an overall mean of 4.63 (SD=0.52) on a 5-point scale, according to expert evaluation. Pilot findings indicated progressive instructional transformation across supervision cycles, moving from surface-level interaction adjustments toward deeper pedagogical integration of culturally responsive strategies. Teachers demonstrated increased contextualization of lesson content, improved inclusive participation structures, and enhanced classroom climate. Findings suggest that area-based supervision functions as a mediating professional learning mechanism that translates equity principles into sustained classroom-level instructional change. The model offers a scalable framework for culturally responsive supervision in diverse educational systems.

This is an open access article under the CC BY-SA license.

Corresponding Author:

Sarawut Chaiyong
Program of Education (Development Education), Faculty of Education, Chiang Mai University
Chiang Mai 50200, Thailand
Email: sarawut_chaiyong@cmu.ac.th

1. INTRODUCTION

In recent decades, promoting educational equity has become a top priority in both national policy agendas and global educational discourse [1]. Equity is no longer confined to issues of access but increasingly encompasses the quality of learning, human capital development, and long-term social sustainability. In Thailand, equity-oriented reforms have been embedded in national education strategies since the late 2000s [2]. However, despite these efforts, significant disparities in educational outcomes

persist. While primary education enrollment is almost universal, progression to lower secondary education remains uneven, particularly between urban and rural areas [3]. Large-scale assessments, such as Programme for International Student Assessment (PISA) and Ordinary National Educational Test (O-NET), continue to reveal achievement gaps that are associated with socioeconomic and geographic inequalities. This suggests that disparities are now more closely linked to the instructional quality rather than just access to education alone.

At the same time, multiculturalism is increasing in Thai classrooms particularly in regions such as Chiang Mai Province, where diverse ethnic, linguistic, and cultural groups coexist. Students bring diverse cultural backgrounds, languages, and experiences into the classroom, positioning schools as critical spaces for promoting equity and inclusion. Despite this diversity, dominant instructional practices in Thailand remain largely standardized, emphasizing uniform curricula, teaching methods, and assessment systems. Research in multicultural education suggests that such approaches often fail to address the diverse cultural capital of learners and may contribute to disengagement and unequal learning outcomes [4]–[5].

Therefore, promoting equity in multicultural classrooms requires more than policy reform; it necessitates transformation at the level of classroom practice. Teachers play a critical role in this process, yet many lack structured support to implement culturally responsive and equity-oriented instructional strategies. Educational supervision has been identified as a key mechanism for supporting teacher professional learning, fostering reflective practice, and improving instructional quality [6], [7]. However, Thailand's existing supervision systems are often centralized and standardized, limiting their responsiveness to local contexts and reducing their effectiveness in diverse educational settings [8].

Specifically, three interrelated problems converge in Thai multicultural classrooms. First, existing supervision frameworks remain predominantly bureaucratic and compliance-oriented, focusing on administrative checklists rather than equity-oriented instructional practice. Second, teachers report a lack of structured, contextually grounded support for responding to cultural diversity in their classrooms. Third, the dominant supervision model assumes a one-size-fits-all approach that is insensitive to the linguistic, ethnic, and socioeconomic heterogeneity of communities such as those in Chiang Mai's northern highlands. These convergent gaps create an urgent need for a supervision model that is simultaneously equity-focused, teacher-supportive, and contextually responsive.

Area-based supervision, which emphasizes contextual responsiveness and localized professional learning, offers a promising alternative. By aligning supervision processes with specific school and community contexts, this approach has the potential to bridge the gap between equity-oriented policy goals and classroom practice. Despite its potential, empirical research on area-based supervision in Thailand remains limited. Previous studies have primarily focused on instructional leadership or coaching, with insufficient attention to supervision as a structured mechanism for promoting equity-oriented instruction. Furthermore, few studies have integrated multicultural education theory with supervision processes within a design-oriented research framework.

This study addresses three pressing gaps in the field: i) the absence of supervision frameworks that explicitly integrate equity principles into localized instructional practice; ii) the limited empirical evidence on how supervision functions as a mediating mechanism for equity-oriented teacher professional learning in multicultural contexts; and iii) the need for contextually responsive supervision models that can inform policy at both provincial and national levels. By developing and piloting a supervision model grounded in the cultural realities of Chiang Mai Province, this study contributes both to the scholarly discourse on equity pedagogy and to the practical toolkit available to education supervisors, administrators, and policymakers working in diverse educational systems.

The novelty of this study lies in the formalization of ethnic minority teachers as cultural coaches—a distinctive supervisory role that has not been previously articulated in the supervision literature. Whereas existing supervision models such as instructional coaching [9] and developmental supervision [10] emphasize partnership and teacher differentiation, they leave the cultural positioning of teachers within multicultural contexts largely unaddressed. Approaches that add cultural responsiveness as a layer on top of an otherwise standard supervision process [11] miss the deeper structural question of whose knowledge counts as legitimate within the professional learning process. Drawing on Fricker [12] framework of epistemic injustice, this study reconceptualizes supervision as a socially situated epistemic intervention in which ethnic minority teachers—typically positioned with less institutional authority—are formally repositioned as expert demonstrators and bridges between community funds of knowledge and curricular knowledge. This redistribution of epistemic authority within the supervision process, rather than the addition of culturally responsive techniques alone, constitutes the study's primary theoretical contribution to the educational supervision literature.

2. METHOD

2.1. Conceptual framework of the study

This study is guided by an integrated conceptual framework as shown in Figure 1, that combines three key theoretical components: multicultural education and equity pedagogy, area-based educational supervision, and supervision as a mediating professional learning mechanism. Multicultural education provides the pedagogical foundation for equity-oriented instructional practices, emphasizing the integration of students' cultural backgrounds into teaching and learning processes [4], [13]. Area-based supervision situates professional learning within specific local contexts, enabling supervision practices to respond to the unique characteristics of schools and communities [7], [8]. Supervision, as a mediating mechanism, facilitates the translation of equity principles into classroom-level instructional practices through structured processes of observation, reflection, and feedback [6], [9].

Within this framework, classroom equity is conceptualized as the primary outcome, reflected in both instructional practices and classroom climate. This includes inclusive participation, culturally responsive pedagogy, and supportive learning environments that promote engagement and achievement for all students. The study adopts a qualitative design-oriented research approach informed by principles of design-based research [14], [15]. This approach emphasizes iterative model development, contextual responsiveness, and the generation of both practical and theoretical contributions.

The integration of these three theoretical components is grounded in sociocultural learning theory [16]–[18], which posits that professional learning—like student learning—is mediated through socially situated practices and dialogue within specific cultural contexts. Equity pedagogy [11] extends this view by emphasizing that equitable instruction requires teachers to engage actively with learners' cultural capital and community knowledge. Area-based supervision, in turn, operationalizes these principles by embedding professional learning within the teacher's own school and community context, thereby reducing the gap between abstract policy principles and classroom-level enactment. Within this framework, the supervisor is positioned not as an inspector but as a co-learner and mediator of equity-oriented instructional transformation.

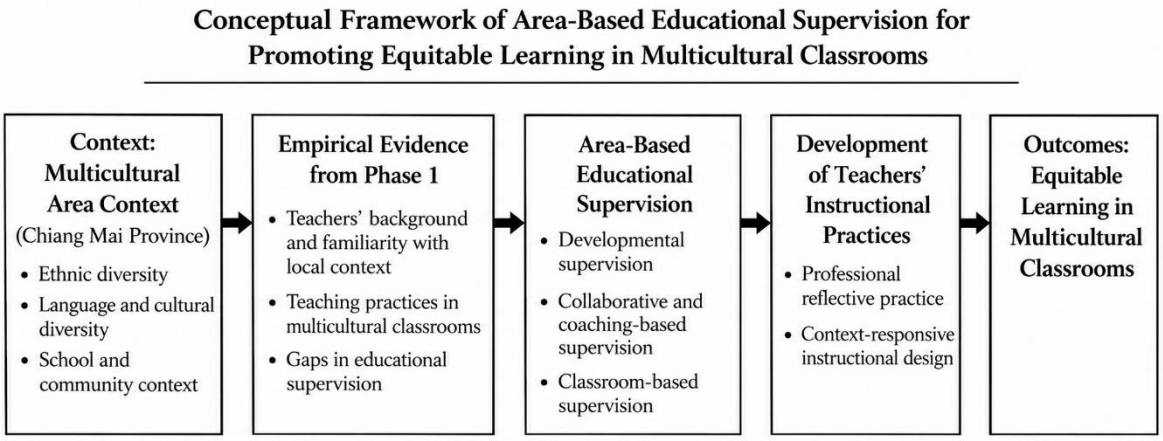


Figure 1. Conceptual framework illustrating the relationship between multicultural context, area-based supervision processes, teacher professional learning, and classroom equity outcomes

2.2. Research design

We employed a qualitative design-oriented research methodology over a period of 24 months from November 2023 to October 2025. The research was conducted in two sequential phases: Phase 1 involved contextual analysis and needs assessment while Phase 2 focused on model development, validation, and pilot implementation. This approach allows for iterative refinement of the supervision model while also evaluating its practical applicability in real-world educational contexts.

The design-based research process followed iterative cycles of design, implementation, evaluation, and refinement. Within each cycle, the supervision model was first designed based on prior findings and theoretical considerations, then implemented with participating teachers in authentic classroom contexts, evaluated through observations and reflective dialogues, and refined based on emergent evidence before proceeding to the next cycle. This iterative logic enabled continuous contextual calibration of the model and generated both practical artifacts (the refined supervision model and its tools) and theoretical insights regarding how supervision mediates equity-oriented instructional change.

2.3. Phase 1: contextual analysis (November 2023–March 2024)

2.3.1. Participants

A total of 47 participants were involved in Phase 1. There were 30 teachers, 4 school administrators, 4 educational supervisors, and 9 education experts (drawn from instructional management for multicultural classrooms, educational administration, educational supervision, and equity advocacy). Participants were selected using purposive sampling to ensure diversity in cultural background, teaching experience, and professional roles. Teachers were recruited from four schools within Pa Miang Subdistrict, Doi Saket District, Chiang Mai Province, a locality selected for its linguistic and ethnic diversity, including Pga K'nyau, Shan, and Northern Thai communities. Inclusion criteria for teachers required at least one year of full-time teaching experience in a multicultural classroom and written consent to participate in classroom observation. Key informants were identified through institutional records and snowball referrals from provincial supervisors.

2.3.2. Data collection employed three complementary methods

Three data collection methods were employed:

- Document analysis: national and local education policy documents, curriculum materials, and research reports were analyzed to identify contextual conditions and policy expectations.
- Semi-structured interviews: interviews explored participants' perspectives on multicultural classrooms, instructional challenges, and supervision practices. Each interview lasted approximately 60 minutes. Sample items included: "how do you draw on students' home languages and community knowledge in your instructional planning?" and "what kinds of supervisory support would help you better serve students from ethnic minority communities?"
- Classroom observations: observations focused on instructional strategies, classroom interaction, and the use of cultural resources in teaching. A structured observation form with seven categories was used, with each observation lasting 60 minutes. Indicators included: i) language use (including students' mother tongues); ii) equity of teacher attention across cultural groups; iii) integration of students' cultural resources into lesson content; iv) responsive feedback practices; and v) classroom climate of mutual respect.

2.4. Phase 2: model development and implementation (April 2024–October 2025)

2.4.1. Model development and validation (April 2024–June 2025)

The supervision model was developed based on findings from Phase 1 and relevant theoretical frameworks. The model consists of five components including guiding principles, objectives, content focus, supervision processes, and evaluation mechanisms. The model was refined through iterative feedback and validated by eight experts in education and supervision. Expert validation used a 5-point Likert scale across 21 items in six dimensions, with mean scores interpreted against the following bands: 1.00–1.49 (least appropriate), 1.50–2.49 (slightly appropriate), 2.50–3.49 (moderately appropriate), 3.50–4.49 (highly appropriate), and 4.50–5.00 (most appropriate). A mean of at least 3.50 across all items was required for the model to proceed to pilot implementation.

2.4.2. Pilot implementation

The model was implemented at one multicultural primary school in Doi Saket District, Chiang Mai Province, serving 71 students from nine cultural groups (Pga K'nyau, Long Neck Karen, Po Karen, Shan, Daraang, Hmong, Lisu, Northern Thai, and Central Thai). Seven classroom teachers and one school principal (n=8) participated over a 13-week period (14 July–10 October 2025) using complete supervision cycles, including pre-observation planning, classroom observation, reflective dialogue, instructional refinement, and follow-up observation. Notably, four of the seven teachers were of Pga K'nyau ethnicity and were formally positioned as cultural coaches—a distinctive role designed to leverage their ethnic and cultural knowledge in supporting fellow teachers' engagement with community funds of knowledge. The data collected during implementation included observations, interviews, reflective discussions, and field notes. Each supervision cycle spanned approximately three weeks and comprised: a pre-observation conference to co-plan the lesson; a 60-minute whole-class observation with structured field notes; a post-observation reflective dialogue focused on equity-oriented instructional moves; a period for instructional refinement; and a follow-up observation. Each teacher completed two complete observation cycles over the 13-week pilot. The primary researcher served as the supervisor-facilitator, while participating teachers engaged in reflective inquiry through both individual dialogues and professional learning community (PLC) sessions.

2.5. Data analysis

Data were analyzed using thematic analysis following Braun and Clarke's six-phase approach [19]. Analysis involved coding, developing themes, and interpretation in relation to the research objectives.

To ensure trustworthiness [20], we implemented data triangulation, member checking, peer debriefing, and reflexive journaling. The analytic sequence ran from familiarization with the transcripts, to open coding, to axial coding, to theme development, and finally to review and refinement. All codes were recorded in a codebook with operational definitions and illustrative exemplars. Because coding was conducted by the primary researcher, trustworthiness was ensured through four complementary strategies rather than inter-coder agreement: i) peer debriefing with the dissertation advisory committee at each analytical milestone; ii) reflexive journaling throughout the coding process to document analytic decisions and potential bias; iii) member checking with key informants and participants to verify interpretations; and iv) cultural verification with a Pga K'nyau teacher serving as cultural mentor to check the accuracy of interpretations involving cultural data. Quantitative data from expert validation were analyzed descriptively (mean and standard deviation or SD) and integrated with the qualitative findings to guide model refinement.

2.6. Ethical considerations

The study received ethical approval from the Chiang Mai University research ethics committee (protocol #67/014; approved 19 February 2024). All participants provided written informed consent prior to participation. Confidentiality was maintained through the use of pseudonyms and secure data storage procedures. Participants were informed of their right to withdraw from the study at any stage without consequences.

3. RESULTS

3.1. Expert evaluation of the supervision model

The overall ratings from eight experts showed the overall ratings at high to very high perceived quality across all evaluated dimensions. The mean scores ranged from 4.38 to 4.88, with SD between 0.26 and 0.55, indicating consistently favorable evaluations with relatively low variability and an overall mean of 4.63 (SD=0.52). The highest mean scores were observed for the model principles and the supervision process. Slightly lower scores were observed in measurement and evaluation, reflecting expert concerns about instrument specificity that were addressed through subsequent assessment redesign. Table 1 summarizes the expert evaluation results across the six quality dimensions of the supervision model, including background and significance, model principles, model objectives, model content, supervision process, and measurement and evaluation.

Table 1. Expert evaluation results of the area-based supervision model across key quality dimensions (n=8)

Evaluation dimension	Mean	SD
Background and significance	4.75	0.45
Model principles	4.88	0.26
Model objectives	4.54	0.52
Model content	4.56	0.46
Supervision process	4.68	0.45
Measurement and evaluation	4.38	0.55
Overall	4.63	0.52

As shown in Table 1, experts gave ratings to the conceptual clarity and internal coherence of the model at high levels, while feasibility received slightly lower ratings, reflecting practical implementation considerations. Qualitative feedback emphasized the structural coherence of the model and the clarity of supervision procedures. Experts highlighted that the integration of contextual analysis, collaborative reflection, and complete supervision cycles distinguished the model from conventional supervision approaches that focus primarily on standardized observation checklists and compliance-oriented evaluation. Recommendations focused on simplifying technical language in the supervision manual, clarifying supervisor roles during reflective dialogue, and expanding classroom-based examples to enhance usability. We incorporated these recommendations into subsequent model revisions prior to pilot implementation.

3.2. Findings from Phase 1: teachers' backgrounds and classroom practices

Findings from Phase 1 were derived from document analysis, interviews, and classroom observations conducted across four multicultural schools in Chiang Mai Province. These sources were analyzed in parallel to capture the contextual conditions shaping multicultural classrooms from policy, institutional, and instructional perspectives. Three major analytic patterns emerged from the cross-source synthesis, presented in the subsections that follow.

3.2.1. Teachers' cultural backgrounds and contextual positioning

Results indicated that teachers' cultural backgrounds and their relationships with local communities significantly influenced instructional practices. Teachers residing within or near school communities demonstrated stronger familiarity with students' languages, cultural practices, and everyday life contexts. These teachers were more likely to connect lesson content with students' lived experiences and community knowledge. Table 2 presents the demographic and professional characteristics of teachers participating in Phase 1 of the study, highlighting variation in contextual familiarity and professional backgrounds.

Table 2. Characteristics of teacher participants in Phase 1 (n=30)

Characteristic	n	%
Local community teachers	12	40.0
Non-local teachers	15	50.0
Ethnic minority teachers	3	10.0
New teachers (≤3 years' experience)	5	16.7
Contract teachers	6	20.0

Teaching experience (years): M=8.8, SD=5.2

The distribution of teacher backgrounds shown in Table 2 highlights the diversity of professional and contextual experiences represented in the sample. The sample includes teachers from local community, non-local, and ethnic minority backgrounds, each contributing distinct cultural and linguistic perspectives to the supervision process. This composition allowed for cross-case comparison of how varying degrees of community embeddedness shaped teachers' instructional decisions in multicultural classrooms.

In contrast, teachers who were newly assigned to the area or residing outside the community reported initial difficulties in interpreting students' cultural contexts and adapting instructional strategies accordingly. These teachers relied more heavily on formal curriculum materials and standardized instructional routines. However, interview data suggested that awareness of contextual gaps motivated these teachers to seek professional support and engage more actively in supervision-related learning processes.

3.2.2. Classroom instructional practices in multicultural settings

Classroom observations revealed that the majority of teachers demonstrated positive attitudes towards student diversity and made efforts to create inclusive learning environments. Some common practices included encouraging student participation, maintaining respectful classroom climates, and fostering supportive teacher–student relationships. Teachers also frequently expressed care for students from ethnic minority backgrounds and articulated commitments to fairness, indicating that dispositional openness to diversity was widely present at the level of belief.

However, despite these positive attitudes, instructional design patterns remained largely uniform across classrooms. Many teachers continued to rely on lecture-based and standardized instructional approaches, and integration of students' cultural knowledge, home languages, and community-based learning resources remained inconsistent and largely confined to informal classroom interactions rather than systematic instructional planning. This pattern revealed a persistent gap between teachers' espoused commitments to diversity and their classroom practice in action, suggesting that attitudinal openness alone was insufficient to produce systematic instructional change in multicultural contexts.

Additionally, there were challenges observed in classroom management and participation patterns. Some teachers relied on repeated behavioral control strategies directed toward specific student groups. While these practices did not appear to be discriminatory, they did highlight the need for more diverse instructional tools and the absence of structured professional support mechanisms for managing multicultural classroom dynamics.

3.2.3. Implications for supervision model development

The combined findings from Phase 1 indicated that instructional challenges in multicultural classrooms were not primarily due to teachers' negative attitudes toward diversity. Instead, they were a result of the lack of structured supervision processes that systematically supported the integration of contextual knowledge into instructional practices. This diagnostic finding shaped the design priorities for Phase 2, in which the supervision model was developed specifically to provide the missing structural support—rather than to address an attitudinal gap that did not, on the evidence, primarily exist.

The varying teachers' cultural backgrounds, professional experience, and familiarity with community contexts among teachers highlighted the need for differentiated supervision approaches. The observed gap between teachers' equity-oriented intentions and actual classroom practices underscored

the importance of supervision mechanisms emphasizing classroom observation, reflective dialogue, and continuous professional learning. These findings were used to inform the design principles, supervision cycle structure, and professional learning components of the supervision model developed in Phase 2.

3.3. Findings from Phase 2: development and validation of the supervision model

3.3.1. Structural design and core components of the supervision model

We developed the supervision model based on findings from Phase 1 and the integrated conceptual framework. The supervision model was developed as an interdependent system consisting of five core components: guiding principles, objectives, content focus, supervision process, and evaluation mechanisms. Rather than functioning as separate elements, these components were intentionally designed to operate as a coherent professional learning system supporting continuous instructional improvement in multicultural classroom contexts.

The guiding principles component provides the conceptual foundation of the model and emphasizes contextual responsiveness, collaborative professional relationships, evidence-informed practice, and continuous development. The objectives component focuses on strengthening teachers' instructional competencies related to equity-oriented pedagogy, including pedagogical knowledge, instructional strategies, and professional attitudes toward diversity. The content component specifies key thematic areas addressed through supervision, such as culturally responsive teaching strategies, contextualized lesson design, and classroom practices promoting equity.

The supervision process and evaluation mechanisms function as operational and feedback structures that translate conceptual principles into classroom-level practice. Together, they form a closed loop in which evaluation outputs feed back into subsequent supervision planning, allowing the model to refine itself iteratively rather than operating as a one-time intervention. The five components work together to form an integrated supervision framework that links theoretical orientation, professional learning processes, and outcome-oriented evaluation. Figure 2 illustrates the structural relationships among the five components and highlights the systemic nature of the model. The interconnections among components emphasize that instructional improvement is not achieved through isolated supervision activities, but through coordinated processes integrating professional learning, classroom practice, and reflective evaluation.

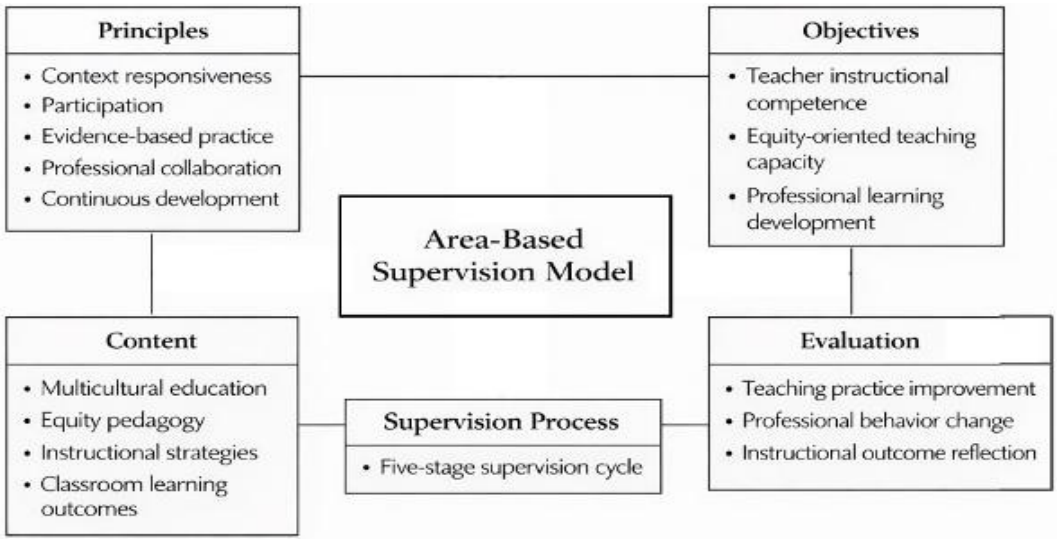


Figure 2. Structural components of the area-based supervision model for promoting equity in multicultural classrooms

3.3.2. Supervision process design and operational structure

The supervision process was operationalized through a five-stage cyclical structure: i) contextual analysis and planning; ii) preparation and capacity building; iii) classroom implementation and observation; iv) reflective dialogue and instructional refinement; and v) evaluation and expansion. This structure was designed to support iterative professional learning rather than one-time supervision events. Each stage draws on principles from established supervision and professional learning traditions, integrated within a unified equity-oriented framework.

Each stage serves a specific function within the overall instructional improvement process. The contextual analysis stage focuses on understanding classroom conditions, student diversity, and instructional challenges. The preparation stage emphasizes collaborative lesson planning and professional capacity development. The implementation and observation stage generates classroom-based evidence to inform reflection. The reflective dialogue stage supports instructional sense-making and pedagogical adjustment. Finally, the evaluation stage provides feedback for subsequent supervision cycles and long-term professional development planning.

As shown in Figure 3, the supervision process is designed as a continuous cycle rather than a linear sequence. This cyclical structure enables sustained instructional refinement and supports gradual pedagogical transformation through repeated cycles of reflection and practice. The cyclical design also operationalizes a sustainability principle within the supervision process itself, ensuring that completion of one cycle generates input for the next rather than terminating with a single round of professional learning.

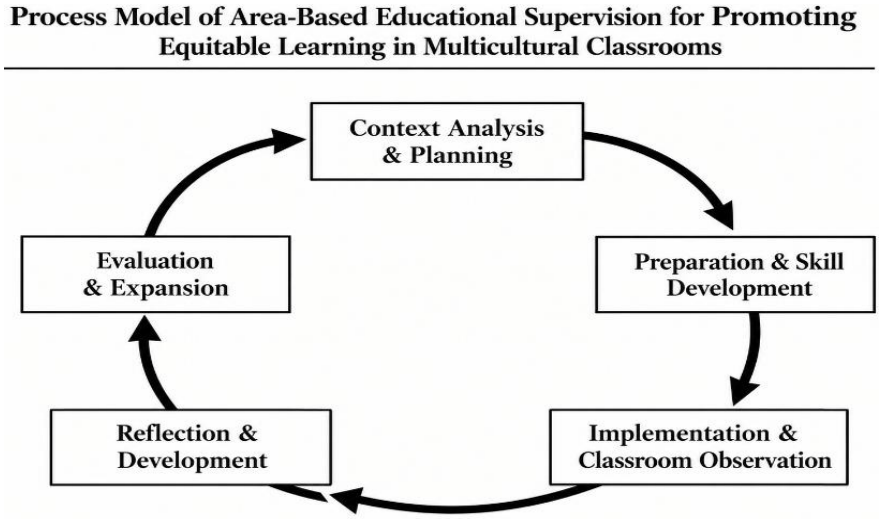


Figure 3. Five-stage supervision cycle for equity-oriented instructional development

3.3.3. Contextual appropriateness and validation outcomes

Feedback from teachers, school administrators, and supervisors involved in the model refinement process indicated that the supervision framework was well-suited for multicultural school environments. Participants reported that the supervision manuals, observation protocols, and reflective dialogue guidelines provided practical tools for professional learning in the classroom. Stakeholders particularly valued the model's integration of cultural context throughout the supervision cycle, identifying this feature as central to the framework's practical relevance in multicultural school settings.

Expert validation further confirmed the conceptual coherence and internal consistency of the model. Evaluation results indicated a strong alignment between the model's guiding principles, supervision processes, and intended instructional outcomes. However, feasibility concerns were also raised, particularly regarding time constraints and scheduling challenges associated with teachers' instructional workloads.

In response to these concerns, implementation guidelines were revised to emphasize flexibility in scheduling supervision activities, integration of supervision sessions into existing school routines, and administrative coordination. These adjustments enhanced the practical applicability of the model prior to pilot implementation. The revised guidelines explicitly positioned supervision as compatible with—rather than additional to—teachers' existing PLC activities, reducing perceived workload pressure and increasing the likelihood of sustained engagement during the pilot phase.

3.4. Pilot implementation outcomes

3.4.1. Instructional change across supervision cycles

Pilot implementation was conducted over a 13-week period using complete supervision cycles. Analysis of classroom observations, reflective dialogue transcripts, and supervision records indicated a progressive pattern of instructional change aligned with the staged supervision process illustrated in Figure 3. Figure 4 illustrates the comparative patterns of instructional change across supervision cycles, highlighting the progression from initial classroom adjustments to deeper pedagogical adaptation.

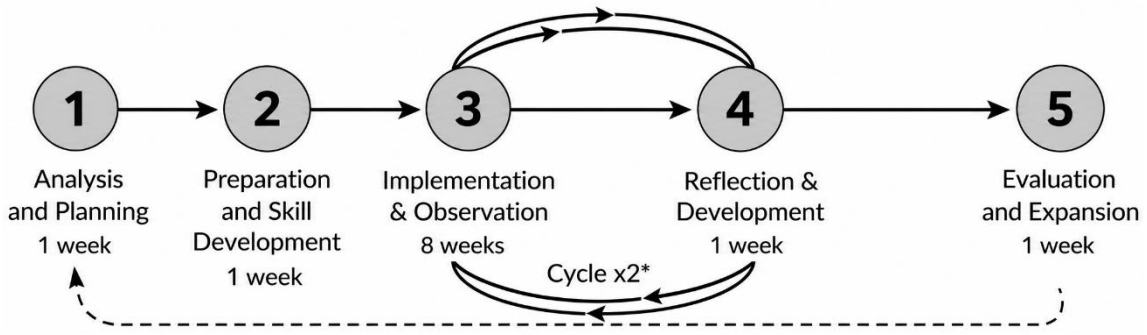


Figure 4. Patterns of instructional change across two supervision cycles during pilot implementation

As illustrated in Figure 4, instructional improvements progressed from surface-level changes in classroom interaction in the first cycle toward deeper pedagogical integration of cultural content and differentiated instructional strategies in the second cycle. This progression aligned with the staged supervision logic in which cycle 1 surfaced classroom dynamics that had previously gone unnoticed, while cycle 2 allowed teachers to act on those insights through deliberate redesign of lesson content and instructional moves. The cycle-over-cycle pattern provided empirical evidence that instructional change in multicultural classrooms is incremental rather than abrupt, requiring sustained reflective engagement rather than one-time training.

During the first supervision cycle, instructional changes were primarily focused on surface-level classroom practices. Teachers demonstrated increased student participation, improved classroom interaction patterns, and greater attention to inclusive learning environments. These initial changes reflected teachers' growing familiarity with reflective supervision processes and increased awareness of classroom equity issues. During the second supervision cycle, deeper pedagogical adaptations emerged. Teachers began to integrate students' cultural backgrounds and community knowledge more systematically into lesson design. Increased use of differentiated instructional strategies and more flexible facilitation of classroom activities were observed. This progression suggests that repeated supervision cycles functioned as scaffolding mechanisms supporting gradual professional learning and instructional transformation.

In addition to instructional changes observed across supervision cycles, classroom observations also suggested indirect positive effects on students' learning experiences and classroom climate. During the pilot phase, students demonstrated more positive peer interactions and stronger classroom relationships, particularly in collaborative learning activities. Teachers' increased use of culturally contextualized examples and locally relevant learning materials appeared to support students' conceptual understanding and engagement with lesson content. Furthermore, the inclusion of multiple local languages and dialects in classroom discussions created more inclusive communication spaces, enabling students to express ideas more confidently and to develop greater mutual understanding across cultural groups. Teachers also reported that students showed increased willingness to attend school regularly, expressed higher levels of enjoyment in classroom activities, and demonstrated stronger feelings of psychological safety and belonging within the learning environment. These observed patterns align with established principles of equitable classroom practice that emphasize balanced participation, structured peer interaction, and inclusive communication practices as key mechanisms for supporting diverse learners [11], [21].

3.4.2. Three paradigm shifts in teacher practice

Analysis of 30 classroom observations, 30 post-observation reflective sessions, PLC transcripts, and teacher artifacts surfaced three interconnected paradigm shifts that mark the change as moving beyond technique acquisition. These shifts indicate that supervision-mediated change operated at the level of teachers' interpretive frames, not only their instructional repertoires. Each shift represents a movement from a default orientation toward a more equity-oriented stance.

- Shift 1: from equality to equity. Before supervision began, most teachers equated fairness with uniform treatment. After supervision, teachers articulated equity as need-differentiated support, recognizing that providing different forms of assistance to different students is not unfair but rather constitutes responsive practice. One teacher articulated this transformation: "*Before, I thought giving every child exactly the same treatment was fairness. But I have come to understand that each child has different needs*." The principal's introduction of the "same-size shoes" metaphor during the early supervision phase became a shared reference point throughout the rest of implementation.

- Shift 2: from central curriculum to local funds of knowledge. The most concrete content-level change was that five of seven teachers (71.4%) moved lesson content away from centrally standardized material toward local community contexts in the second observation cycle. This shift reflected teachers' growing capacity to recognize and integrate cultural and community resources as legitimate curricular content. Table 3 documents the cycle-to-cycle transformation in instructional content across all seven participating teachers.

Table 3. Content transformation from cycle 1 to cycle 2 (n=7 teachers)

Teacher	Cycle 1 content	Cycle 2 content
T1	Word-writing/sentence-composition	Sentence-composition using local scenes
T2	Occupational virtues (DLTV broadcast)	Roles of community members
T3	Standard math word problems	Math problems derived from the Eco Walk trail
T4	Drawing from imagination	"Whispers from the leaves" (Hmong-pattern integration)
T5	Big/Small vocabulary	"Introducing our school"
T6	Gravity experiment	Living organisms in Mae Pha Tuen Stream
T7	Early childhood activities	Activities integrated with Pga K'nyau folktale

- Shift 3: from deficit to asset-based thinking about students. Teachers' language about ethnic minority students moved from framings emphasizing what students lacked (Thai-language proficiency, classroom participation) to framings emphasizing what students brought (cultural knowledge, community relationships, distinctive forms of expression). A Pga K'nyau teacher reflected: "*Being Pga K'nyau myself helps me understand the children more deeply—I know why they are quiet. It is not because they do not know. It is our cultural norm of respecting elders and not interrupting*." This reflection reframes student silence, moving it from a deficit (comprehension failure) to a culturally meaningful expression that requires a different pedagogical reading.

3.4.3. The cultural coach mechanism

The formalization of four Pga K'nyau teachers as cultural coaches emerged as a distinctive mechanism mediating instructional change across the pilot. Cultural coaches led demonstrations during the preparation phase and supported colleagues throughout reflective dialogue sessions, providing both contextual expertise on community funds of knowledge and pedagogical strategies grounded in cultural understanding. This mechanism produced what we interpret as a two-layered effect on the supervision process.

On the surface, cultural coaches provided teachers with contextually grounded teaching techniques, including bilingual scaffolding strategies, extended wait time aligned with cultural communication norms, and culturally specific classroom management approaches. These concrete techniques were directly transferable across classrooms and were rapidly adopted by colleagues from outside the Pga K'nyau community. Underneath this technical transfer, however, the formal positioning of ethnic minority teachers as experts disrupted the conventional institutional hierarchy of Thai educational supervision.

Ethnic teachers—usually positioned with less authority within Thai educational bureaucracy—became the source from whom other teachers learned. A Northern Thai teacher reflected on this experience: "*Hearing the Pga K'nyau teachers describe their methods, I felt it was simple but powerful*." This redistribution of epistemic authority within the supervision process is interpretable through Fricker [12] framework of epistemic justice, in which the recognition of marginalized knowers as legitimate sources of knowledge constitutes a corrective to systemic devaluation. We hold this interpretation tentatively given the single-school pilot scope, but the direction of movement and the mechanism are clearly visible in the data.

3.4.4. Differential teacher responses based on cultural backgrounds

Analysis revealed variation in teachers' responses to the supervision model based on their cultural backgrounds and familiarity with the local community contexts. Teachers who resided within or near school communities demonstrated faster adaptation to the instructional model and were able to integrate contextual knowledge into their classroom practices more immediately. These teachers were able to draw upon existing cultural familiarity when designing learning activities and responding to student diversity.

On the other hand, teachers from outside the community initially relied more heavily on structured supervision guidance and reflective dialogue to interpret classroom contexts. However, over successive supervision cycles, these teachers demonstrated an increase in contextual awareness, greater instructional flexibility, and improved integration of students' cultural resources. This pattern indicates that the supervision processes supported the gradual development of local contextual competence among teachers with limited prior community familiarity.

3.4.5. Enabling factors and implementation challenges

Several enabling factors supported effective implementation of the supervision model. Strong administrative support facilitated the scheduling and coordination of supervision activities. Trust-based professional relationships between supervisors and teachers promoted open reflective dialogue and a willingness to experiment with new instructional strategies. The use of classroom evidence as the foundation for feedback further enhanced the relevance and credibility of supervision discussions. The key enabling factors and implementation challenges identified during the pilot phase are summarized in Table 4.

The factors presented in Table 4 indicate that both organizational support and relational trust functioned as enabling conditions that facilitated teacher engagement and sustained supervision implementation. However, there were also challenges identified: constraints related to teaching workloads limited opportunities for extended reflective dialogue sessions. Some teachers initially expressed discomfort with classroom observation, reflecting limited prior experience with collaborative supervision practices. Teachers gradually overcame these challenges through repeated supervision cycles, relationship-building efforts, and flexible scheduling arrangements that normalized reflective professional dialogue.

Table 4. Enabling factors and implementation challenges identified during pilot implementation

Category	Key findings
Enabling factors	Administrative support; trust-based supervisor–teacher relationships; use of classroom evidence for reflective dialogue
Implementation challenges	Time constraints; initial teacher discomfort with classroom observation; scheduling limitations

3.4.6. Sustainability and scalability considerations

Findings indicate that sustainability of the supervision model is supported by its integration into routine instructional planning and professional reflection practices. Teachers increasingly incorporated reflective dialogue and instructional adaptation into their regular teaching routines, suggesting that supervision processes became embedded within everyday professional practice rather than functioning as external interventions. However, scalability requires specific enabling conditions. These include professional development for supervisors in coaching-based and culturally responsive supervision approaches, leadership commitment at the school level, institutional flexibility in scheduling supervision activities, and alignment with local educational administration structures. Without these conditions, the quality of implementation may vary across school contexts.

4. DISCUSSION

4.1. Conceptual validity of the area-based supervision model

The gradual instructional transformation observed across supervision cycles can be explained through the lens of sociocultural learning theory [16]–[18]. When supervisors engaged teachers in dialogic reflection grounded in concrete classroom events, they created a supportive professional learning space in which teachers could progress from their existing pedagogical repertoires toward more equity-oriented practices through scaffolded, socially mediated reflection. This mechanism helps explain why pedagogical change emerged gradually rather than abruptly: such change requires iterative cycles of enactment, dialogue, and refinement rather than one-off training inputs. Supervision in this model therefore functions as a mediating mechanism that translates equity principles into classroom-level practice through reflective, culturally situated learning.

The findings from expert validation indicate that the proposed supervision model demonstrates strong conceptual coherence, internal consistency, and alignment between its guiding principles and operational processes. These results suggest that the model effectively integrates theoretical constructs with practical implementation mechanisms, addressing a persistent limitation in supervision reforms within centralized education systems. Previous studies have highlighted that supervision reforms often fail to translate policy-level intentions into classroom practice [8], [22].

The present model addresses this limitation by embedding contextual responsiveness, collaborative professional learning, and structured evaluation within a unified framework. This integration is what distinguishes the model from supervision reforms that have attempted to add cultural responsiveness as a discrete component on top of an otherwise compliance-oriented process. This approach aligns with contemporary perspectives that conceptualize supervision as a form of ongoing professional learning rather than compliance-based monitoring [6], [7], [23].

However, expert feedback also highlighted feasibility concerns, particularly regarding time constraints and teacher workload. These concerns reflect a common challenge in educational reform,

emphasizing the need to balance conceptual rigor with practical implementation conditions [24]. The model's subsequent revisions during Phase 2 were direct responses to these feasibility concerns and contributed to the model's practical viability for the pilot phase.

4.2. Instructional equity challenges as structural rather than attitudinal issues

The findings from Phase 1 indicate that instructional inequities in multicultural classrooms are primarily structural rather than attitudinal. Teachers generally expressed positive beliefs toward diversity and inclusion; however, classroom practices remained largely standardized and insufficiently responsive to students' cultural and linguistic backgrounds. This pattern points to the supervisory and curricular architecture surrounding teachers—not the teachers themselves—as the primary site requiring intervention.

This discrepancy between belief and practice reflects a well-documented challenge in multicultural education, where equity-oriented dispositions alone are insufficient to produce meaningful pedagogical change without structured professional support [4], [5]. The gap between teachers' espoused commitments to diversity and their day-to-day classroom practice indicates that, under instructional pressure and in the absence of structured supports, teachers often default to standardized practice even when they hold equity-oriented values. Recognizing this gap reframes the design challenge as one of restructuring the supervisory and curricular environment rather than retraining teachers' attitudes.

Furthermore, the findings suggest that the absence of systematic professional learning mechanisms limits teachers' ability to translate equity principles into practice. This supports existing research emphasizing that instructional improvement requires organizational learning structures rather than relying solely on individual teacher commitment [25], [26]. The implication for supervision design is that supervisors must be positioned as facilitators of structured collaborative inquiry, not as enforcers of standardized practice, if the supervisory architecture is to become a vehicle for equity-oriented change rather than an obstacle to it.

Variation in teachers' cultural backgrounds and contextual familiarity further underscores the need for differentiated professional learning approaches. Teachers embedded within local communities demonstrated stronger contextual integration, whereas those from outside the community relied more heavily on standardized instructional practices. This pattern is consistent with sociocultural perspectives on learning, which emphasize the role of context in shaping professional practice [16], [17].

4.3. Area-based supervision as a context-responsive professional learning system

The developed model illustrates how area-based supervision can function as a context-responsive professional learning system that integrates multiple dimensions of instructional development. By linking guiding principles, instructional content, supervision processes, and evaluation mechanisms, the model moves beyond fragmented professional development toward a coherent system of instructional improvement. This integration is particularly important in multicultural contexts, where isolated training events have historically failed to produce sustained pedagogical change.

This coherence reflects key characteristics of effective professional learning, including sustained engagement, collaboration, and alignment with classroom practice [23], [27]. Sustained engagement is operationalized through the cyclical structure of the supervision process; collaboration is operationalized through the PLC-based reflective dialogue sessions; and alignment is operationalized through the use of classroom-based evidence as the substrate of every supervisory conversation. The interlocking of these three features distinguishes the model from professional development designs that address each only in isolation.

Importantly, the area-based approach situates supervision within local sociocultural contexts, enabling teachers to draw upon community knowledge and students' lived experiences. This contrasts with traditional supervision models that emphasize standardization over contextualization [8]. The contextual situating is not merely a setting variable: it constitutes a deliberate epistemic positioning, in which community knowledge is treated as a legitimate input to instructional design rather than as background information of secondary relevance.

The five-stage supervision cycle operationalizes this framework by structuring iterative processes of observation, reflection, and instructional refinement. Such cyclical processes are consistent with inquiry-based professional learning approaches that emphasize continuous improvement through evidence-informed practice [6], [28]. By making each cycle's outputs available as inputs to the next, the structure supports the gradual deepening of teachers' equity-oriented practice across time rather than relying on a single instructional event.

4.4. Supervision cycles and the mechanisms of instructional change

The pilot implementation provides empirical evidence that instructional change is gradual, iterative, and mediated through structured supervision processes. Teachers initially demonstrated surface-level

adjustments before progressing toward deeper pedagogical transformation across supervision cycles. The two-cycle structure made this incremental developmental pattern observable in ways that one-time training events typically cannot.

This progression aligns with theories of teacher professional learning that conceptualize change as a non-linear developmental process involving experimentation, reflection, and refinement [9], [29]. Such theories emphasize that pedagogical transformation rarely proceeds in a single decisive shift; instead, it unfolds through repeated cycles of practice and reflective adjustment. The observed cycle 1–to–cycle 2 trajectory provides concrete empirical support for this developmental view.

Supervision cycles functioned as scaffolding mechanisms that supported the incremental integration of culturally responsive practices into classroom instruction. The emphasis on reflective dialogue and classroom-based evidence was particularly significant, as these elements have been identified as critical components of effective professional learning [6], [30]. The combination of structured observation, dialogic interpretation, and iterative return gave teachers both the analytical tools and the temporal architecture needed to translate equity principles into sustained classroom practice.

The pilot data offer specific empirical leverage on the question of how reflective dialogue concretely influences instructional decision-making—a micro-process question that has remained under-specified in much of the supervision literature. Cycle 1 observations surfaced classroom dynamics that teachers had not previously seen, including unconscious bias in teacher language (one teacher told an ethnic minority student attempting to respond in Thai "you're just guessing"), passive responses to peer accent-mocking, and the insight that "the math problem is a language problem" in classrooms where students were working in their non-native language. Cycle 1 reflective dialogue made these dynamics analytically visible to the teachers themselves, and cycle 2 observations documented direct remediation: teacher language shifted from deficit-framed to affirmative phrasing such as "try thinking again"; accent-mocking was directly addressed when it occurred; and mathematics assessment was redesigned to separate language ability from content ability. This sequence demonstrates that the mediating mechanism is not reflective dialogue in the abstract, but rather a specific combination of three elements: observable classroom evidence generated through systematic observation, collaborative interpretation through PLC-based dialogue, and iterative return that allows teachers to act differently in the subsequent cycle. This pattern is consistent with Rapanta *et al*. [30] account of reflection-on-action but specifies its operational conditions more precisely.

Moreover, improvements in classroom interaction, student engagement, and inclusive participation suggest that supervision-mediated instructional changes contribute to broader equity outcomes. These findings are consistent with prior research linking culturally responsive pedagogy to enhanced student engagement and learning experiences [5], [13], [31], [32]. Although the pilot did not measure student outcomes systematically, the observed shifts in classroom interaction patterns provide preliminary evidence that supervisory change at the teacher level translates into more inclusive learning environments at the classroom level.

4.5. Differential teacher learning trajectories and the role of supervision

The findings reveal variation in teacher learning trajectories based on cultural positioning and contextual familiarity. Teachers with strong connections to local communities demonstrated more rapid instructional adaptation, while those from outside the community initially relied more on structured supervision support. This pattern indicates that cultural positioning is not merely a demographic variable but an active resource that shapes how teachers engage with equity-oriented professional learning.

This pattern highlights the role of supervision as a mediating mechanism that supports differentiated professional learning. It aligns with sociocultural theories of learning, which emphasize that professional development is shaped by individuals' interactions with their social and cultural contexts [16], [33]. The supervisory architecture must therefore be flexible enough to accommodate different starting points without diluting the equity-oriented commitments that anchor the model.

These findings suggest that effective supervision models should incorporate adaptive support mechanisms tailored to teachers' diverse backgrounds and professional needs, rather than adopting uniform approaches. The cultural coach role within the present model represents one operationalization of this differentiation principle, providing peer-level cultural guidance to teachers without strong community ties. Other adaptive mechanisms—such as differentiated supervision intensities or scaffolded entry pathways—could productively complement this design in subsequent implementations.

4.6. Organizational conditions, sustainability, and scalability

The findings underscore the importance of organizational and relational conditions in supporting effective supervision implementation. Administrative support, trust-based professional relationships, and flexible scheduling emerged as key enabling factors. These factors operate as enabling conditions that

significantly shape implementation effectiveness and the depth to which supervisory design can be realized in classroom practice.

These results are consistent with implementation research indicating that educational innovations require supportive institutional environments to be sustained over time [24], [34]. A notable enabling condition at the pilot site was the presence of Pga K'nyau teachers within the school's existing staff, which made the cultural coach mechanism operationally possible. Replication in settings without comparable internal cultural capacity, administrative support, or collaborative professional structures will require explicit attention to building these enabling conditions during implementation planning.

The integration of supervision into routine instructional practice suggests potential for long-term sustainability. However, scalability remains dependent on critical enabling conditions, including supervisor capacity development, leadership commitment, and institutional flexibility. Without these supports, implementation quality may vary across contexts [35].

4.7. Contributions to educational supervision and equity-oriented instruction

This study makes a valuable contribution to the field of educational supervision by providing empirical evidence that supervision can function as a mediating bridge between equity-oriented theory and classroom practice. Whereas much of the prior supervision literature has theorized supervision primarily as a technical or administrative function, the present findings position supervision as a vehicle for translating equity principles into observable classroom change. This repositioning addresses a long-standing gap in the field between equity theorizing and the institutional mechanisms required for equity-oriented practice.

While multicultural education has been extensively theorized [4], [13], empirical research on how these principles is operationalized through supervision remains limited, particularly in Southeast Asian contexts. The dominant strands of multicultural education scholarship have focused on curricular content and classroom pedagogy, leaving the supervisory architecture surrounding these practices comparatively under-examined. The present study contributes to filling this gap by providing one operational mechanism through which multicultural education theory can be translated into supervisory practice in a Southeast Asian setting.

This study extends on existing supervision theory by emphasizing contextual responsiveness, iterative professional learning processes, and the integration of supervision within local educational environments. It also redefines supervision as a socially situated and transformative process, rather than a compliance-oriented function. Together, these moves reposition supervision research from describing context-sensitive practice toward theorizing the structural conditions under which contextually grounded supervision can produce equity-oriented instructional change.

Positioned against existing supervision frameworks, this study extends, refines, and in places challenges prior work. Knight [9] instructional coaching model emphasizes partnership and equal voice between supervisor and teacher, but leaves the cultural positioning of teachers within multicultural contexts largely unaddressed; the present study extends this partnership principle by specifying how cultural positioning operates within the supervisory relationship through the formalized cultural coach role. Glickman *et al*. [10] developmental supervision attends to differentiation across teachers' developmental levels but does not engage with community funds of knowledge as a curricular resource; the present study refines developmental supervision by integrating differentiation across both developmental and cultural-positional dimensions. Inspectorial supervision models that dominate centralized education systems [8] operate within a compliance paradigm that the present findings directly challenge: the pilot evidence indicates that instructional change in multicultural classrooms requires a supportive rather than evaluative supervisory orientation. Approaches that add cultural responsiveness as a discrete layer on top of an otherwise standard supervision process [11] miss the deeper structural question of whose knowledge counts as legitimate within the professional learning process, which this study foregrounds.

What distinguishes the proposed model most fundamentally from mainstream supervision approaches is that it was not conceived as a technical tool for skill development alone. Two foundational differences are built into its design. First, the model treats instructional challenges in multicultural classrooms not as technical problems solvable through an improved skill set, but as equity issues requiring teachers' paradigm transformation—consistent with Tikly and Barrett [36] capability-based perspective that quality education must expand teacher and student capabilities rather than merely transmit prescribed knowledge. Second, the model is grounded in sociocultural learning theory [18] and a perspective attentive to how structural mechanisms devalue minority languages and cultures—what Bourdieu [37] termed symbolic violence—acknowledging that professional learning in multicultural settings is shaped by, and must respond to, unequal distributions of institutional recognition. The model's ultimate aim is therefore not skill development toward a fixed standard but the cultivation of classrooms in which psychological safety and belonging are actively supported, students of all cultural backgrounds can express their identities, and family and community funds of knowledge are recognized as educationally valuable. We advance this framing as a

direct expression of epistemic justice in Fricker [12] sense, while acknowledging that the single-school pilot scope limits the degree to which these structural mechanisms can be comprehensively verified.

The theoretical contribution of this work can therefore be stated more sharply along two dimensions. First, where existing supervision research has theorized supervision primarily as a professional learning process [6], [10], this study foregrounds supervision as a socially situated epistemic intervention in which the central question is not only what teachers learn but whose knowledge counts as legitimate within the learning process. Second, where prior work has called for "community partnership" in supervision as an aspirational principle [19], this study specifies a structural mechanism through which such partnership can be operationalized: the formally defined cultural coach role with attendant responsibilities, recognition, and safeguards. These two contributions together reposition area-based supervision research from describing context-sensitive practice toward theorizing the epistemic redistribution that contextually grounded supervision can enable.

These findings carry three implications for education policy and practice. For policy, provincial education offices should consider formalizing area-based supervision units with dedicated budgets and training pathways, particularly in provinces with high cultural diversity. For administrators, integrating supervision cycles into teachers' existing PLC schedules—rather than adding them as separate administrative burdens—offers a feasible pathway to scaling. For teacher education, pre-service programs should prepare prospective teachers to engage reflectively with supervisors around equity questions, treating supervision as a career-long learning relationship rather than an evaluative event.

4.8. Limitations

Several limitations should be acknowledged. First, the pilot implementation involved a small sample of teachers within a single school context, which may limit the generalizability of the findings. Second, the study relied primarily on qualitative data and did not include quantitative measures of student outcomes. Third, the researcher's dual role as model developer and supervisor may introduce potential bias, despite the use of triangulation and reflexive strategies. These limitations constrain claims about the model's scalability across different educational environments, and future testing with larger and more diverse participant groups across multiple provinces and educational levels will be necessary to establish transferability.

Future research should expand the model across diverse contexts, incorporate mixed-method approaches, and examine long-term impacts on student learning outcomes. While the qualitative evidence in this study documents observable instructional change, future studies should complement it with quantitative indicators—such as student learning outcomes, engagement metrics, and classroom observation scores—to provide triangulated evidence of the model's impact on student learning. For practical adoption, three implementation strategies are recommended: i) translating supervision manuals into plain-language formats that reflect teachers' everyday professional vocabulary, avoiding unnecessary technical jargon; ii) embedding supervision cycles within existing PLC or lesson-study schedules so that no additional administrative burden is created for teachers; and iii) positioning school administrators as collaborative supervisors rather than evaluators, aligning supervision with the school's professional culture of mutual learning.

5. CONCLUSION

This study provides evidence that instructional inequities in multicultural classrooms in Chiang Mai Province are primarily structural rather than attitudinal. Although the teachers studied demonstrated positive attitudes toward diversity, the absence of structured professional learning mechanisms limited their ability to translate equity-oriented principles into classroom practice. In response to this gap, the study developed and validated an area-based supervision model that functions as a context-responsive professional learning system, integrating multicultural education theory, developmental supervision, and iterative supervision cycles within a unified framework that links contextual understanding with classroom-level instructional transformation. The main empirical findings cluster around two interlocking results: structurally, that supervision can operate as a mediating mechanism for equity-oriented instructional change when designed around classroom-based evidence and iterative reflection; and substantively, that meaningful change manifests not as the acquisition of new techniques alone but as a transformation in how teachers understand fairness, curriculum, and their students.

Pilot implementation produced empirical evidence that the model mediates three interconnected paradigm shifts in teachers: from equality to equity, from centralized curriculum to local funds of knowledge, and from deficit to asset-based thinking about students. These three shifts, taken together, indicate that supervision-mediated change operated at the level of teachers' interpretive frames rather than only their instructional repertoires, transforming how teachers read fairness in classrooms, what content counts as legitimate curricular material, and how cultural and linguistic difference is interpreted pedagogically. The formalization of four Pga K'nyau teachers as cultural coaches emerged as the distinctive supervisory

mechanism through which these paradigm shifts were supported: by redistributing epistemic authority within the supervision process, the mechanism enabled community funds of knowledge to enter classroom instruction as legitimate curricular content and produced a two-layered effect—direct technique transfer at the surface, and a structural disruption of the conventional hierarchy of Thai educational supervision underneath. The convergence of paradigm shifts and the cultural coach mechanism constitutes the central main finding of the pilot phase.

The study makes a twofold theoretical contribution to the educational supervision literature. First, it reconceptualizes supervision in multicultural contexts as a socially situated epistemic intervention—extending beyond the conventional theorization of supervision as a professional learning process and foregrounding the question of whose knowledge counts as legitimate within that learning. Second, it specifies the cultural coach role as a concrete, replicable structural mechanism through which community partnership in supervision can be operationalized, moving the field from aspirational principle to actionable design. Together with the empirical demonstration of three paradigm shifts in teachers, these contributions position the model not as a technical refinement of supervision practice but as a paradigm-level reorientation toward epistemic justice in multicultural classrooms. While the single-school pilot scope and reliance on qualitative evidence constrain claims about long-term sustainability and statistical generalizability, the model's coherent integration of equity, supervision, and area-based grounding offers a transferable framework for further empirical testing. Future research should examine the model across diverse multicultural contexts within and beyond Thailand, incorporate quantitative measures of student outcomes, and investigate long-term implementation patterns—particularly whether the cultural coach mechanism and PLC structures sustain without external facilitation across leadership transitions.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to the participating schools, teachers, school administrators, and educational supervisors in Chiang Mai Province for their cooperation and valuable contributions throughout the data collection and pilot implementation phases. The authors also acknowledge the support provided by the Faculty of Education, Chiang Mai University, for facilitating ethical review procedures and providing academic guidance during the research process. Additionally, the authors also thank the dissertation advisory committee for their constructive feedback and academic support.

FUNDING INFORMATION

Authors state no funding involved.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Sarawut Chaiyong	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	
Pisith Nasee	✓	✓		✓			✓			✓		✓		
Omsin Jatuporn	✓		✓	✓			✓			✓	✓	✓		
Tharn Thong-Ngok	✓	✓		✓						✓		✓		

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

The study approved by Chiang Mai University Research Ethics Committee (protocol code 67/014 and date of approval: 19 February 2024).

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author, [SC], upon reasonable request.

REFERENCES

[1] UNESCO, *Global education monitoring report 2020: inclusion and education: all means all*. Paris: UNESCO Publishing, 2020, doi: 10.54676/JJNK6989.

[2] Office of the National Economic and Social Development Council, "National reform plans (revised edition)," (in Thai), 2021. Accessed Jul. 08, 2025. [Online]. Available: https://www.nesdc.go.th/wordpress/wp-content/uploads/2025/06/cr-improvement.pdf

[3] Office of the Secretariat of the National Education Council, "Education in Thailand 2019–2021," (in Thai), 2021. Accessed Jul. 08, 2025. [Online]. Available: https://online.fliphtml5.com/wbpvz/tmhz/

[4] G. Gay, *Culturally responsive teaching: theory, research, and practice*, 3rd ed. New York, NY: Teachers College Press, 2018.

[5] C. Wu, N. Saenghong, and O. Jatuporn, "The study of multicultural education and teachers' multicultural teaching competency in Singapore and South Korea," *rEFLections*, vol. 30, no. 3, pp. 887–912, Nov. 2023, doi: 10.61508/refl.v30i3.268950.

[6] H. Timperley *et al.*, *Teacher professional learning and development*. Wellington: New Zealand Ministry of Education, 2007.

[7] I. Nurhasanah and E. D. Wasliman, "Educational supervision as a strategic mechanism for improving instructional quality," *Journal of Educational Management Research*, vol. 5, no. 1, pp. 726–736, Jan. 2026, doi: 10.61987/jemr.v5i1.1772.

[8] OECD, *Creating effective teaching and learning environments*. Paris: OECD Publishing, 2009, doi: 10.1787/9789264068780-en.

[9] J. Knight, *Instructional coaching: a partnership approach to improving instruction*. Thousand Oaks, CA: Corwin, 2007.

[10] C. Glickman, S. Gordon, and J. Ross-Gordon, *SuperVision and instructional leadership: a developmental approach*, 10th ed. Boston, MA: Pearson Education, 2018.

[11] R. Lotan, "Teaching teachers to build equitable classrooms," *Theory into Practice*, vol. 45, no. 1, pp. 32–39, Feb. 2006, doi: 10.1207/s15430421tip4501_5.

[12] M. Fricker, *Epistemic injustice*. Oxford: Oxford University Press, 2007, doi: 10.1093/acprof:oso/9780198237907.001.0001.

[13] Z. Hammond, *culturally responsive teaching and the brain: promoting authentic engagement and rigor among culturally and linguistically diverse students*. Thousand Oaks, CA: Corwin, 2015.

[14] E. Baumgartner *et al.*, "Design-based research: an emerging paradigm for educational inquiry," *Educational Researcher*, vol. 32, no. 1, pp. 5–8, Jan. 2003, doi: 10.3102/0013189X032001005.

[15] A. L. Brown, "Design experiments: theoretical and methodological challenges in creating complex interventions in classroom settings," *Journal of the Learning Sciences*, vol. 2, no. 2, pp. 141–178, Apr. 1992, doi: 10.1207/s15327809jls0202_2.

[16] J. Lave and E. Wenger, *Situated learning: legitimate peripheral participation*. Cambridge, U.K.: Cambridge University Press, 1991, doi: 10.1017/CBO9780511815355.

[17] E. O. Peter, F. U. Onowugbeda, P. A. Okebukola, D. O. Agbanimu, A. I. Oladejo, and O. A. Gbeleyi, "Integrating culture and context: enhancing students' performance in computer networking," *The Journal of Educational Research*, pp. 1–10, Dec. 2025, doi: 10.1080/00220671.2025.2590508.

[18] L. S. Vygotsky, *Mind in society: development of higher psychological processes*. Cambridge, MA: Harvard University Press, 1978.

[19] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77–101, Jan. 2006, doi: 10.1191/1478088706qp063oa.

[20] Y. S. Lincoln and E. G. Guba, *Naturalistic inquiry*. Newbury Park, CA: SAGE Publications, 1985.

[21] S. M. Roldán, J. Marauri, A. Aubert, and R. Flecha, "How inclusive interactive learning environments benefit students without special needs," *Frontiers in Psychology*, vol. 12, p. 661427, Apr. 2021, doi: 10.3389/fpsyg.2021.661427.

[22] C. C. Hsieh, A. H. Khau, Y. Song, and H. C. Li, "Impact of school leadership on teachers' instructional practices: examining mediating roles of collegiality and teacher autonomy using Vietnam TALIS 2018," *International Journal of Educational Research*, vol. 132, p. 102621, 2025, doi: 10.1016/j.ijer.2025.102621.

[23] A. I. Barokah, L. Yuliana, and S. Raharja, "Developing a community-based academic supervision model: a strategic reform for enhancing professional learning in Indonesian primary schools," *European Journal of Sustainable Development Research*, vol. 9, no. 4, p. em0332, Oct. 2025, doi: 10.29333/ejosdr/16862.

[24] M. Fullan, *The new meaning of educational change*, 4th ed. New York, NY: Teachers College Press, 2007.

[25] M. Liljenberg and U. Blossing, "Organizational building versus teachers' personal and relational needs for school improvement," *Improving Schools*, vol. 24, no. 1, pp. 5–18, Mar. 2021, doi: 10.1177/1365480220972873.

[26] Q. Zhan, X. Wang, and H. Song, "The relationship between principals' instructional leadership and teacher retention in the undeveloped regions of Central and Western China: the chain-mediating role of role stress and affective commitment," *Behavioral Sciences*, vol. 13, no. 9, p. 738, Sep. 2023, doi: 10.3390/bs13090738.

[27] P. Salo, S. Francisco, and A. O. Almqvist, "Understanding professional learning in and for practice," *Professional Development in Education*, vol. 50, no. 3, pp. 444–459, May 2024, doi: 10.1080/19415257.2024.2311108.

[28] Ö. Şengül and N. N. Karabacak, "Sustainable inquiry-based learning through adaptive management: a phenomenological study of physics teachers in Türkiye," *Sustainability*, vol. 18, no. 3, p. 1481, Feb. 2026, doi: 10.3390/su18031481.

[29] Z. Makhmetova, L. Karabassova, A. Zhakim, and A. Karinov, "Exploring the effects of professional learning experiences on in-service teachers' growth: a systematic review of literature," *Education Sciences*, vol. 15, no. 2, p. 146, Jan. 2025, doi: 10.3390/educsci15020146.

[30] C. Rapanta, A. Miralda-Balda, M. Garcia-Milà, M. Vrikki, F. Macagno, and M. Evagorou, "Detecting the factors affecting classroom dialogue quality," *Linguistics and Education*, vol. 77, p. 101223, Oct. 2023, doi: 10.1016/j.linged.2023.101223.

[31] C. S. Abacioglu, M. Volman, and A. H. Fischer, "Teachers' multicultural attitudes and perspective taking abilities as factors in culturally responsive teaching," *British Journal of Educational Psychology*, vol. 90, no. 3, pp. 736–752, Sep. 2020, doi: 10.1111/bjep.12328.

[32] G. Ladson-Billings, "Culturally relevant pedagogy 2.0: a.k.a. the remix," *Harvard Educational Review*, vol. 84, no. 1, pp. 74–84, Apr. 2014, doi: 10.17763/haer.84.1.p2rj131485484751.
[33] J. Zou and S. Jiang, "Adaptive instructional designs in blended learning to enhance student engagement and self-regulation," *Computers and Education Open*, vol. 9, p. 100299, Dec. 2025, doi: 10.1016/j.caeo.2025.100299.
[34] R. Prenger, A. P. M. Tappel, C. L. Poortman, and K. Schildkamp, "How can educational innovations become sustainable? A review of the empirical literature," *Frontiers in Education*, vol. 7, p. 970715, Aug. 2022, doi: 10.3389/feduc.2022.970715.
[35] S. Hadad, I. Blau, O. Avidov-Ungar, T. Shamir-Inbal, and A. Amir, "Continuity and quality in pre-service teacher preparation across modalities: core principles in a crisis leadership framework," *Education Sciences*, vol. 15, no. 10, p. 1355, Oct. 2025, doi: 10.3390/educsci15101355.
[36] L. Tikly and A. M. Barrett, "Social justice, capabilities and the quality of education in low income countries," *International Journal of Educational Development*, vol. 31, no. 1, pp. 3–14, Jan. 2011, doi: 10.1016/j.ijedudev.2010.06.001.
[37] P. Bourdieu, *Language and symbolic power*. Cambridge, MA: Harvard University Press, 1991.

BIOGRAPHIES OF AUTHORS



Sarawut Chaiyong is a doctoral candidate in the Development Education Program at the Faculty of Education, Chiang Mai University, Thailand. He also serves as an educational supervisor at Chiang Mai Primary Educational Service Area Office 1. His research focuses on educational supervision, equity-oriented instruction, multicultural education, and teacher professional development, with particular emphasis on the design and implementation of context-responsive supervision models that support instructional improvement in culturally diverse learning environments. His doctoral work develops the EQUIP Model, an area-based supervision framework for promoting equity-oriented instruction in multicultural classrooms in Chiang Mai Province. In the present study, he served as the principal investigator responsible for conceptualization, methodology design, data collection, analysis, and manuscript preparation. He can be contacted at email: sarawut_chaiyong@cmu.ac.th.



Pisith Nasee is an assistant professor in the Department of Educational Foundations and Development, Faculty of Education, Chiang Mai University, Thailand, where he also serves as Chair of the Graduate Program in Education and head of the Research Center for Multiculturalism and Education Policy—an interdisciplinary platform that brings together researchers from the Faculties of Education, Social Sciences, and Architecture for collaborative research and policy dialogue on multiculturalism, learning, and social justice. His research focuses on development, multicultural education, critical pedagogy, social movements, and social justice, particularly in urban contexts and marginalized communities. He teaches multicultural education to pre-service teachers and graduate courses including current issues in education, development education, and lifelong learning. In the present study, he contributed to conceptual development, methodology design, and critical review of the supervision model. He can be contacted at email: pisith.nasee@cmu.ac.th.



Omsin Jatuporn is an associate professor in the Department of Educational Foundations and Development, Faculty of Education, Chiang Mai University, Thailand. His academic expertise lies in critical pedagogy, social foundations of education, curriculum theory, and multicultural education, with particular emphasis on decolonization, teacher education reform, and discourse analysis in the Thai educational context. He leads M.Ed. and Ph.D. programs in Multicultural Education and supervises graduate research on critical and decolonial approaches to curriculum and teacher education. His scholarly work engages questions of competency-based curriculum, instructional freedom for teachers at the operational level, and the integration of critical perspectives into contemporary Thai education reform. In the present study, he provided theoretical guidance on multicultural education, critical and decolonial perspectives, and contributed to manuscript review and refinement. He can be contacted at email: omsin.j@cmu.ac.th.



Tharn Thong-Ngok is an assistant professor in the Department of Educational Foundations and Development, Faculty of Education, Chiang Mai University, Thailand. His research interests include educational leadership, school administration, school improvement, work-integrated learning, and policy implementation in diverse educational contexts. His work focuses on strengthening institutional capacity and developing effective leadership systems that enhance teaching quality and promote equitable learning environments, particularly in ethnically diverse and resource-constrained school settings. He teaches courses on educational administration and supervises graduate research in educational leadership and school improvement. In the present study, he provided expertise on educational administration, supervision policy, and contributed to the conceptual framing of area-based supervision and to manuscript review. He can be contacted at email: tharn.th@cmu.ac.th.