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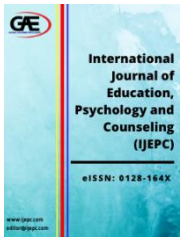

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A CONCENTRIC RING MODEL FOR DIAGNOSING PROFESSIONAL LEARNING COMMUNITY (PLC) EFFECTIVENESS: A CONCEPTUAL STUDY

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Abstract:

Professional Learning Communities (PLCs) are widely promoted to improve teaching and learning, yet many schools report uneven impact despite formal adoption. Persistent variability suggests that structural arrangements alone do not guarantee sustained professional learning or instructional change. Schools often misdiagnose and confuse procedural compliance with effectiveness and overlook the interplay between organizational conditions and teachers' psychological readiness. Without a clear diagnostic lens, leaders tend to apply generic solutions that fail to move practice. This conceptual study develops a practical, theory-informed framework to explain and diagnose PLC effectiveness by distinguishing enabling structures from enabling psychologies, and by positioning PLCs along developmental continua of leadership distribution and motivational quality. Using a structured conceptual synthesis, the study integrates recent evidence on PLCs, leadership, implementation, and teacher motivation to construct a proposed Concentric Ring Model that separates Organizational factors (time, resources, routines, facilitative leadership) from Individual factors (trust, collective efficacy, autonomous motivation). Two orthogonal axes, which are Hierarchy to Collaboration and Control to Commitment, are overlaid to identify typical PLC states and pathways for improvement. The study shows that durable PLC improvement requires the concurrent alignment of structural and psychological prerequisites. The axes enable the diagnosis of PLC maturity by capturing interaction quality and motivational climate. PLC success is most likely when organizational supports and professional psychologies

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converge at a clearly defined "bullseye." The Concentric Ring Model provides both an explanatory lens and a practical diagnostic tool, enabling schools to move beyond compliance toward collaborative, inquiry-rich, and sustained professional learning.

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Keyword:

Professional Learning Communities (Plc), School Improvement, Collective Teacher Efficacy, Instructional Leadership, Proposed Diagnostic Model

Introduction

The implementation of Professional Learning Communities (PLCs) has emerged as a promising strategy for enhancing educational practices and improving student outcomes across various contexts. Despite the widespread adoption of PLCs, many educational institutions struggle to translate the mechanical processes of PLC implementation into tangible improvements in student learning. This disconnect often results from a predominant focus on organizational factors, such as leadership structures and procedural frameworks, while neglecting critical individual factors, which encompass the beliefs, commitments, and interactions of educators and students (Donohoo, 2017).

Research illustrates that effective school leadership plays a crucial role in bridging this gap. Transformational leadership styles, which promote shared decision-making and collaboration among educators, have been positively correlated with student achievement. The lack of emphasis on the interpersonal realms of teaching and learning can lead to ineffective PLCs where teacher autonomy and professional growth are stifled. This is further echoed in findings highlighting the significance of trust and collaboration among educators in fostering professional development and collective efficacy (Donohoo, 2017; Zabidi et al., 2023). By engaging teachers in reflective practices and dialogue, particularly within the framework of PLCs, schools can cultivate stronger relationships that contribute to improved student outcomes (Desimone, 2009).

The current discourse underscores the necessity for educational leaders to embrace a dual-axis framework that shifts from hierarchical control to collaborative commitment. The transition from traditional models of leadership to ones that emphasize collaborative learning environments has been shown to enhance both teacher efficacy and student engagement

(Donohoo, 2017; Pilotti et al., 2023). Furthermore, interventions based on growth mindset principles have demonstrated substantial impacts on student achievement, illustrating the interconnectedness of educator beliefs and student performance (Yeager et al., 2019; Yeager et al., 2020). Therefore, a deeper understanding of the dual influence of organizational and individual factors is essential for driving effective PLC practices. Despite the widespread adoption of PLC structures, a significant gap remains in our understanding of how the interplay between organizational control and individual commitment dictates the long-term success of these communities. Most existing literature focuses on the mechanics of scheduling rather than the cultural shift required for authentic collaboration (Stoll et al., 2006). This study is significant because it provides educational leaders with a diagnostic lens to move beyond 'PLC Lite', which is a state of superficial compliance, toward a self-sustaining culture of collective efficacy.

Past studies have underscored the importance of cultivating a deep learning environment that emphasizes collective efficacy rather than surface-level participation. Stoll et al. (2006) claimed that developing professional learning communities can significantly enhance the capacity for sustainable improvement within school systems. They argue that authentic PLCs empower educators to share knowledge and insights actively, thereby enriching the learning experience for both teachers and students. Similarly, Trilaksono et al. (2019) found that professional development initiatives focused solely on short-term knowledge acquisition often led to a disconnect from the personalized and social development needs of educators. Villeneuve and Bouchamma (2021) also emphasized the role of data-informed decision-making processes in supporting educational leaders as they navigate planned organizational changes within their PLCs. They noted that effective use of local data can help tailor initiatives that align with the unique contexts and needs of educational communities, thus promoting genuine buy-in from staff members and shifting the focus from extrinsic motivations towards building intrinsic commitment to the PLC's goals.

The significance of cultivating a culture of intrinsic motivation among educators is critical. Research suggests that when teachers are motivated by a shared vision and a collective responsibility for student learning, they engage more deeply in the PLC processes and contribute to more substantial educational outcomes (Cherkowski, 2016). To address these concerns, this paper proposes the PLC Multi-Dimensional Map, which serves as a diagnostic tool to help educational leaders identify the factors impeding successful PLC implementation. This model highlights the critical shifts required from Hierarchy to Collaboration and from Control to Commitment to foster a supportive culture where all stakeholders are invested in improving educational outcomes. In conclusion, a holistic approach that unites organizational and individual elements within the PLC framework is paramount to realizing the full potential of professional learning communities in enhancing student learning experiences.

Despite the growing recognition of Professional Learning Communities (PLCs) as a mechanism for school improvement, existing PLC scholarship remains theoretically fragmented. Most studies examine either structural enablers such as leadership, scheduling, and organizational routines, or psychological dimensions such as trust, motivation, and collective efficacy in isolation. Consequently, educational leaders often lack an integrative diagnostic framework capable of explaining why PLCs with apparently similar structures produce substantially different instructional outcomes. This conceptual fragmentation limits schools' ability to diagnose implementation failures beyond procedural compliance. Therefore, the present study addresses this theoretical gap by proposing a Concentric Ring Model that

International Journal of Education, Psychology and Counseling
IJEPC
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synthesizes organizational and psychological dimensions into a unified explanatory system capable of diagnosing PLC developmental states, identifying structural–psychological misalignments, and guiding evidence-aligned improvement pathways.

Literature Review

Professional Learning Communities (PLCs) continue to be positioned as a central mechanism for building educator capacity, strengthening instructional coherence, and improving student learning. Over the past decade, research has increasingly emphasized that PLC effectiveness is contingent not merely on structural arrangements but on the interaction of organizational and psychological conditions. Recent evidence reinforces the need to examine PLCs as socio-cultural ecosystems where leadership, collaboration, motivation, and efficacy interact dynamically.

Structural Conditions and Leadership Dynamics in PLCs

A consistent thread in contemporary PLC scholarship is that structures enable, but do not guarantee, impact. Recent studies underscore that protected time, clear routines, facilitative leadership, and data infrastructures create the conditions under which collaborative inquiry can translate into instructional improvement. For example, a PISA-2022–based analysis of 16,072 STEM teachers showed that PLC participation significantly mediates the relationship between digital PD and classroom integration of technology. The analysis showed that PD is more likely to show up in teaching when teachers are embedded in functioning PLCs with regular and purposeful collaboration (Liu et al., 2024). At the conceptual level, Hudson (2024) argues that system and school leaders must specify operating norms, such as agenda protocols, roles, and decision rules, to reduce ambiguity and move PLCs beyond "*meeting compliance*," proposing a definitional and operational framework for PLCs that integrates structural clarity with inquiry cycles.

Leadership emerges as the fulcrum that aligns structures with professional learning. In secondary schools situated in challenging contexts, ethnographic case studies show that shared leadership and co-responsibility foster extended PLCs that weave networks within and beyond school walls around a common improvement purpose. These arrangements are underpinned by principles of care and social justice and are experienced by participants as strengthening both social and professional capital (Olmo-Extremera et al., 2025). Complementing this, an international review of 355 outputs found that leadership which protects teacher autonomy, professional development, and voice is associated with stronger teacher commitment and retention, clarifying what leaders can do, for example, give choice over methods, support instructional experimentation, and create formal avenues for teacher voice, to stabilize and deepen collaborative work (Nguyen et al., 2024).

Notably, reviews and mapping studies signal growth in PLC research worldwide and highlight structural priorities: adequate time, role clarity, and evidence use. A Scopus-based review of 2019–2024 publications identify a rising trend in PLC studies, with Teaching and Teacher Education as a frequent outlet and "leadership," "networks," and "teacher growth" as focal themes, suggesting a pivot from generic collaboration to designed collaboration linked to improvement aims (Thanh et al., 2024). In summary, these findings converge on a design logic for PLCs, in which the structures (time, teams, tools) are necessary enablers and become

International Journal of Education, Psychology and Counseling
IJEPC
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sufficient only when leadership aligns them with inquiry, agency, and evidence (Liu et al., 2024).

Teacher Collaboration and Interaction Quality

The PLC interaction quality predicts professional learning gains among teachers. In a mixed-methods line of work, scholars have moved from the presence of collaboration to the nature of collaborative talk and joint work. Large-scale and case evidence indicate that when PLC conversations are open, elaborative, and evidence-seeking, teachers report greater learning and enact more ambitious instructional changes; conversely, "round-robin sharing" stalls learning even when meeting routines are in place (Hudson, 2024). A study of PLCs and collaborative teaching practices underscores that positive effects on student achievement and teacher growth materialize under conditions of adequate time, supportive leadership, and resource allocation, pointing to the interaction between structure and dialogic norm-setting (Khasawneh et al., 2023). Observational and ethnographic analyses within disadvantaged secondary settings further reveal that collaborative knowledge-building is sustained when teams connect internal and external networks, normalizing the circulation of practices and feedback across professional boundaries (Olmo-Extremera et al., 2025). Contemporary literature reviews focused on facilitation and leadership of PLCs also catalogue the micro-moves that lift interaction quality, for example, establishing inquiry questions, structuring protocols for looking at student work, and designing cycles of trial and reflection, thereby preventing slippage into perfunctory meetings (Louca & Constantinou, 2023). In short, teacher collaboration is productive when it is dialogic, evidence-rich, and protocol-scaffolded, a conclusion echoed across conceptual and empirical sources.

Psychological Conditions: Trust, Motivation, and Collective Teacher Efficacy

Relational Trust as a Mediator

An expanding cross-national evidence base positions relational trust as a key mediator linking leadership practices to PLC functionality. Gu et al. (2025) show that teachers' perceptions of principal trustworthiness mediate leadership's effect on PLC development, implying that technical changes (time, agendas) are unlikely to yield robust collaboration without parallel relational work. Similarly, Wood et al. (2024) report that team trust explains substantial variance in PLC team functionality, suggesting that building vulnerability-safe norms, like surfacing errors and sharing failures, is not ancillary but central to PLC performance. These findings show that trust enables and protects challenging and inquiry-oriented dialogue among teachers during PLC.

Collective Teacher Efficacy as a Proximal Mechanism

Collective Teacher Efficacy (CTE) is a powerful proximal predictor of instructional improvement and climate. Patterson's (2024) longitudinal study shows that routines that articulate teacher thinking, which consist of common language, visible pedagogy, and shared analysis, build CTE over time, yielding schoolwide pedagogical coherence. Beyond professional learning, CTE also correlates with teacher well-being, with Amirian et al. (2025) finding that CTE significantly predicts psychological well-being, outstripping even teacher leadership as a predictor, underscoring why high-CTE PLCs are more resilient and persistent. New multilevel work also links school-level CTE to reductions in disruptive behavior and finds

International Journal of Education, Psychology and Counseling
IJEPC
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that CTE moderates the relation between individual self-efficacy and disruption, implying system-level benefits when PLCs cultivate a shared sense of collective agency (Holter et al., 2026). Recent studies' advances extend CTE to inclusive education, validating a cross-national scale for *collective efficacy in inclusive practices* (TEIP-C) across Canada, Germany, and Switzerland, which is an important step for PLCs focused on equity and diverse learner needs (Knickenberg et al., 2025). Synthesis in special education suggests that higher CTE is associated with fewer externalizing behaviors and more prosocial outcomes for students facing behavioral risks, signaling practical dividends for PLCs that intentionally build collective agency (Müller et al., 2024).

Autonomous Motivation and Self-Determination Theory (SDT)

A 36-study systematic review and meta-analysis shows that SDT-based interventions significantly enhance autonomy and competence, which are the needs that underpin sustained professional engagement, across both experimental and quasi-experimental designs (Wang et al., 2024). Complementarily, Malmström and Öqvist (2025) show that teachers' self-efficacy (intrinsic) and social support (extrinsic) jointly shape motivation and consequent leadership behaviors, empirically affirming that autonomy-supportive contexts are more likely to yield committed PLC participation rather than mere attendance. The SDT also emphasizes parallel attention to teachers' needs (autonomy, competence, relatedness) to avoid motivational erosion from administrative control and inflexible curricula, which are the conditions that can derail PLCs into compliance (Wang et al., 2024; Ryan & Deci, 2017).

Theoretical Foundations of the Concentric Ring Model

The proposed Concentric Ring Model is theoretically anchored in three complementary perspectives: Professional Learning Community theory, Self-Determination Theory (SDT), and Collective Teacher Efficacy (CTE). PLC theory explains how collaborative inquiry structures enable professional learning through shared practice, reflective dialogue, and instructional problem-solving (Stoll et al., 2006). However, PLC theory alone insufficiently explains why structurally similar PLCs often demonstrate varying levels of sustainability and instructional impact. To address this limitation, SDT (Ryan & Deci, 2017) contributes an explanatory mechanism for motivational regulation by distinguishing controlled participation from autonomous commitment. This distinction is essential for understanding movement along the Control → Commitment continuum proposed in the model. Simultaneously, CTE theory explains how collective beliefs regarding instructional capability mediate collaborative action and school improvement processes (Donohoo, 2017). Integrating these theoretical strands enables the model to conceptualize PLC effectiveness not merely as organizational participation, but as the interaction between enabling structures and enabling psychologies.

Integrated Perspectives and Emerging Trends

There are four converging trends in PLC scholarship. First, there is a measurable increase in PLC studies and a methodological broadening that includes network analysis and mixed methods, signalling the field's maturation (Nguyen et al., 2024). Second, research highlights PLCs as mediating infrastructures for translating professional learning into practice, particularly in digital integration, where routine participation and structured collaboration amplify the effects of PD (Liu et al., 2024). Third, literature across challenging contexts emphasizes networked PLCs that extend collaboration beyond the school, naming relational

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 63 (June 2026) PP. 473-490

trust, shared leadership, and co-responsibility as necessary conditions for impact (Olmo-Extremera et al., 2025). Fourth, there is an explicit link to teacher well-being and retention, where leadership that protects autonomy, professional growth, and voice interacts to improve commitment and reduce attrition risks, which are the keys to sustaining PLC cycles over time (Nguyen et al., 2024).

Despite considerable advances in understanding PLC structures, interaction dynamics, and psychological underpinnings, several critical research gaps remain. Recent global reviews show a growing body of PLC research but also highlight that most studies concentrate on either structural enablers (leadership routines, scheduling, protocols) or psychological conditions (trust, collective efficacy, motivation), rather than examining how these domains interact to produce sustainable improvement (Nguyen et al., 2024; Liu et al., 2024). While emerging evidence underscores the importance of trust, collective efficacy, and autonomy-supportive climates for PLC functionality, few conceptual models integrate these variables into a unified diagnostic framework (Gu et al., 2025; Wood et al., 2024). Additionally, existing studies rarely address the misalignment problem, where schools possess well-defined structures but lack the psychological conditions required for inquiry-rich practice, or vice-versa, despite widespread acknowledgement that such imbalances lead to "PLC-lite" outcomes (Hudson, 2024; Hendrickx et al., 2025).

Although SDT-based motivation research provides strong evidence for the role of autonomy and need-supportive leadership in sustaining engagement, this work has seldom been explicitly connected to PLC development or mapped onto diagnostic continua (Wang et al., 2024). Furthermore, the literature lacks accessible multi-dimensional diagnostic tools that help leaders identify a PLC's developmental position and detect the specific structural–psychological gaps impeding progress. Synthesizing across these developments and gaps, the literature increasingly supports the dual-ring perspective proposed in this conceptual study, where outer-ring structures (time, routines, facilitative leadership) are non-negotiables, yet inner-ring psychologies (trust, collective teacher efficacy, autonomous motivation) are the active ingredients that convert organizational capacity into sustained instructional improvement.

Methodology

This study adopts a conceptual research design using thematic synthesis and model construction to integrate evidence on PLC structures, interaction quality, and teacher motivation into a diagnostic framework. Conceptual articles warrant an explicit design, justified theory selection, and transparent synthesis procedures (Jaakkola, 2020). Table 1 shows the conceptual design phases of this study. Consistent with past studies' conceptual article development, this study follows Jaakkola's (2020) framework for theory synthesis and conceptual integration. The methodology was designed to ensure transparency in how constructs were identified, categorized, and translated into the final model architecture. Rather than proposing an abstract conceptual diagram without procedural grounding, the study systematically synthesized empirical and conceptual evidence across PLC implementation, instructional leadership, teacher collaboration, motivational theory, and collective efficacy research. This process strengthened theoretical coherence by ensuring that each component of the proposed model emerged from converging evidence patterns.

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 63 (June 2026) PP. 473-490

Table 1: Summary Of The Study's Conceptual Design Phases

Phase	Inputs	Activities	Outputs	Key citations
Literature Scoping	PLC leadership/operation; SDT motivation; international datasets	Purposeful search (2019–2026) prioritizing reviews and conceptual works	Curated corpus for synthesis	Hudson (2024); Liu et al. (2024); Wang et al. (2024); OECD (2025)
Open coding	Extracted passages on structures & psychologies	Identify descriptive themes	Codebook of themes	Hudson (2024); Liu et al. (2024)
Analytic categorization	Codebook	Group themes as Organizational vs Psychological	Two-ring variable set	Wang et al. (2024); Hudson (2024)
Dimensional mapping	Two-ring set	Map to axes: Hierarchy→Collaboration and Control→Commitment	Four developmental quadrants	Wang et al. (2024); OECD (2025)
Model construction	Themes and axes	Concentric Ring Model	Diagnostic States and Pathways	Jaakkola (2020); Hudson (2024)

Note: SDT = Self-Determination Theory; PLC = Professional Learning Community.

Literature Scoping

We conducted a focused scoping of two domains: (a) organizational/leadership research on hierarchy, distributed leadership, and PLC operation; and (b) motivation research grounded in Self-Determination Theory (SDT) (Ryan & Deci, 2017). Scoping prioritized recent systematic reviews, large-scale studies, and conceptual works (2019–2026), including PLC mediation of PD effects (Liu et al., 2024), operational principles for PLCs (Hudson, 2024), SDT meta-analytic findings (Wang et al., 2024), and TALIS-2024/2025 insights on collaboration and teacher agency (OECD, 2025).

Thematic Synthesis

We applied a three-stage synthesis, that are: (a) open coding of descriptive themes, including protected time, facilitative leadership, dialogic protocols, trust, collective efficacy, and autonomous motivation; (b) analytic categorization into Organizational vs. Psychological conditions; and dimensional mapping onto two continua, that are Hierarchy → Collaboration and Control → Commitment, reflecting leadership distribution and motivational quality (Hudson, 2024; Wang et al., 2024).

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 63 (June 2026) PP. 473-490

Model Construction

The synthesised themes were translated into a Concentric Ring Model, where the outer ring (time, routines, resourcing, facilitative leadership) and inner ring (trust, collective teacher efficacy, and autonomous motivation). Superimposing the two axes yields four diagnostic quadrants that represent typical PLC states and improvement pathways (Liu et al., 2024; OECD, 2025). Table 2 defines the variables used to build the conceptual model.

Table 2: Variables And Operational Definitions Used in The Concentric Ring Model

Domain	Variable	Definition	Citations
Organizational (outer ring)	Protected time and routines	Scheduled, protocol-guided meetings focused on evidence	Hudson (2024); OECD (2025)
	Facilitative leadership	Leaders distribute roles, create psychological safety, and keep inquiry cycles on track	Hudson (2024); Liu et al. (2024)
	Resourcing	Access to data, materials, and peer observation opportunities	Liu et al. (2024); OECD (2025)
Psychological (inner ring)	Relational trust	Willingness to share problems and expose practice without fear	Hudson (2024)
	Collective teacher efficacy	Shared belief that the team can raise learning for students	Hudson, 2024; OECD, 2025
	Autonomous motivation (SDT)	Teachers' self-endorsed reasons for engaging in PLC work	Wang et al., 2024

Rationale for Methodological Approach

A conceptual synthesis design was selected because scholarship on PLCs is fragmented across leadership or organization studies, teacher motivation, and professional development, yielding valuable but partial insights that seldom cohere into an explanatory system for implementation. For example, time and routines, interaction quality, trust, collective efficacy, and motivational climate are often examined in isolation. A theory-building design allows us to integrate these strands systematically, as recommended for rigorous conceptual articles that must declare design logic, justify theory roles, and translate dispersed findings into coherent frameworks (Jaakkola, 2020). Recent PLC evidence shows that structured collaboration mediates the translation of professional development into classroom practice, while SDT meta-analytic work explains why motivation quality matters for sustained engagement; integrating these literatures closes a known gap between organizational enablers and psychological mechanisms (Liu et al., 2024; Wang et al., 2024).

Furthermore, international indicators from TALIS 2024/2025 underscore the policy relevance of teacher autonomy, collaboration, and voice, strengthening the case for a framework that links structural supports with professional psychologies in a way that leaders can diagnose and act upon (OECD, 2025). By mapping themes onto two empirically grounded continua, where

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 63 (June 2026) PP. 473-490

Hierarchy→Collaboration and Control→Commitment, the approach identifies latent relationships between leadership distribution, interaction quality, and motivational regulation that single-factor studies cannot reveal (Hudson, 2024; Wang et al., 2024). The resulting Concentric Ring Model thus contributes a theoretically grounded yet practitioner-oriented diagnostic tool that helps school leaders locate PLCs developmentally, detect specific misalignments between outer-ring structures and inner-ring psychologies, and plan targeted improvement pathways consistent with the latest evidence base (Nguyen et al., 2024; Liu et al., 2024; OECD, 2025).

Findings

Synthesizing findings across leadership or organizational studies, motivation research, and international indicators yielded a Concentric Ring PLC Diagnostic Model that specifies the joint conditions under which PLCs are most likely to be consequential for teaching and learning. The outer ring identifies non-negotiable organizational enablers, which are protected time, inquiry-oriented routines, resourcing, and facilitative leadership, without which collaboration tends to remain procedural and weakly connected to instructional change. Large-scale evidence shows PLC participation mediates the translation of professional development into classroom practice, clarifying the enabling role of structures when collaboration is routine and purposeful (Liu et al., 2024). The operational elements of those structures, such as protocols, roles, and decision rules, are consistent with contemporary conceptualizations of effective PLC operation that move beyond attendance toward inquiry cycles and evidence use (Hudson, 2024). System-level indicators from TALIS 2024/2025 corroborate the relevance of these conditions, linking collaboration and teacher participation in decision-making to stronger professional climate and adaptive instruction, underscoring their policy salience (OECD, 2025). Figure 1 shows the proposed concentric ring model for diagnosing the effectiveness of PLC.

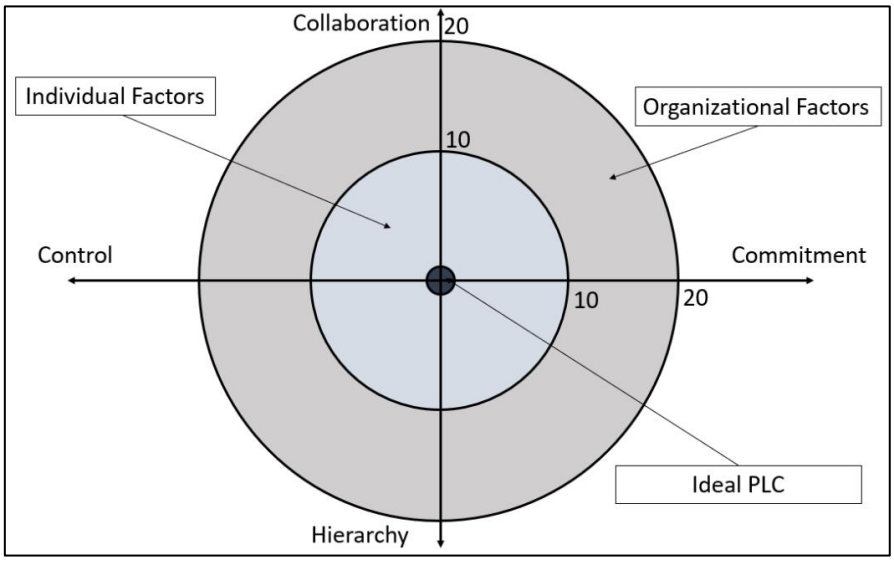

Figure 1: The Concentric Ring Model for Diagnosing the PLC Effectiveness

Note: This figure visually corresponds to the narrative in Section 2 (Methodology) and should be placed after that section's "Model Construction" subsection.

International Journal of Education, Psychology and Counseling
IJEPC
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Volume 11 Issue 63 (June 2026) PP. 473-490

The inner ring isolates the psychological prerequisites that differentiate high-functioning from low-functioning PLCs, which are relational trust, collective teacher efficacy (CTE), and autonomous motivation (Knickenberg et al., 2025). Recent work shows that trust mediates leadership effects on PLC development and team functionality, indicating that technical fixes absent relational work are unlikely to shift interaction quality (Gu et al., 2025; Wood et al., 2024). In parallel, emerging multilevel evidence links school-level CTE to a healthier instructional climate, including lower disruptive behaviour, while also showing CTE strengthens the benefits of individual self-efficacy, and it will amplify classroom-level effects in collectively efficacious schools (Holter et al., 2026). Finally, SDT meta-analytic findings demonstrate that autonomy-supportive contexts reliably enhance autonomy and competence, providing a mechanism for sustained, high-quality engagement in collaborative inquiry rather than short-term compliance (Wang et al., 2024). These strands ground the inner ring as the active ingredient that converts organizational capacity into durable collaborative work.

Overlaying two empirically anchored developmental axes, that are Hierarchy → Collaboration (leadership distribution or interaction quality) and Control → Commitment (motivational regulation), produces four diagnostic quadrants that describe typical PLC states and improvement pathways. The axes align with current PLC operations scholarship emphasizing dialogic, evidence-seeking interaction over perfunctory exchange (Hudson, 2024) and with SDT evidence that distinguishes controlled from autonomous participation (Wang et al., 2024). The model predicts that PLCs cluster away from impact when they sit in Directive–Compliance (strong structures, low trust/ownership) or Collaborative–Compliance (high collegiality, weak routines/resources) quadrants. Conversely, PLCs approach the "bullseye", which is sustained, inquiry-rich collaboration with observable instructional uptake, when outer-ring enablers co-align with inner-ring psychologies in the Collaborative–Commitment quadrant. This configuration is consistent with previous studies and with international survey signals linking teacher voice or autonomy to adaptive instruction and job satisfaction, suggesting that leaders seeking durable gains must deliberately sequence structural supports and cultivate motivational and relational conditions (Liu et al., 2024; OECD, 2025).

Beyond theoretical explanation, the model functions as a school-level diagnostic instrument capable of informing leadership intervention strategies. Educational leaders may use the framework to identify whether PLC stagnation originates primarily from structural deficits, such as insufficient collaboration time, weak facilitative leadership, lack of protocols or psychological deficits, such as low trust, weak collective efficacy, controlled participation. This distinction is practically significant because schools frequently implement generalized PLC reforms without identifying the underlying mechanism constraining improvement. For example, schools located within the Directive–Compliance quadrant may require relational trust-building and autonomy-supportive leadership interventions, whereas schools located within the Collaborative–Compliance quadrant may require stronger inquiry routines and evidence-based structures. Thus, the framework supports more precise and context-responsive leadership decision-making.

In summary, the model functions diagnostically by making visible which ring or axis is constraining progress in each school. Where time and routines exist but interaction remains cautious and informational, the model attributes stagnation to inner-ring deficits, whether it lacks trust, CTE, or autonomy, and suggests autonomy-supportive facilitation and efficacy-building routines; where commitment and collegial energy are present, but work is episodic, it attributes stagnation to outer-ring deficits, such as time, protocols, resourcing, and

International Journal of Education, Psychology and Counseling
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prioritizes structural protections. These prescriptions align with practitioner-validated design guidance for PLC operation and with TALIS findings on collaboration and teacher agency, offering leaders a clear, evidence-aligned roadmap for moving PLCs toward the high-impact centre (Edwards, 2025).

Discussion

From Alignment to Enactment: Why Both Rings Matter

This conceptual study argues that PLC effectiveness hinges on simultaneous alignment of (a) organizational prerequisites (time, resources, facilitative leadership, and coherent structures) and (b) individual psychological prerequisites (relational trust, autonomous motivation, and collective teacher efficacy). The interpretation is consistent with recent reviews showing that PLCs stagnate when structures exist without concomitant shifts in trust and efficacy, or when enthusiasm exists without protected time and resourcing to sustain collaborative inquiry. Cross-system evidence links leadership practices to collective teacher efficacy, serving as a powerful proximal driver of instructional improvement, while also showing that trust mediates leadership effects on PLC quality and team functionality (Gu et al., 2025; Çoğaltay & Boz, 2022). Complementary research in teacher motivation indicates that autonomy-supportive leadership is associated with higher self-determined motivation and engagement, offering a mechanism for movement along the Control → Commitment axis (Collie, 2023; Haw & King, 2023). For example, a headteacher introduces weekly PLC time but notices perfunctory "*round-robin*" updates. Using the framework, she diagnoses strong outer-ring alignment (time allocated) but weak inner-ring conditions (low trust, low efficacy). She responds by coaching middle leaders to use need-supportive moves by giving meaningful rationales and inviting teacher voice, and by explicitly tracking team-level efficacy indicators, rather than only attendance. Over a term, teachers report greater ownership and begin co-planning assessments, which will be a movement toward Commitment and Collaboration (Collie, 2023; Gu et al., 2025).

Interaction Quality as the Engine of PLC Gains

The proposed model helps explain why some PLCs remain "*busy but flat*." Recent evidence shows that interaction patterns, whether conversations are open, elaborative, and inquiry-oriented versus merely informational, distinguish high-gain PLCs, thereby moving teams up the Hierarchy → Collaboration axis (Hendrickx et al., 2025; Hudson, 2024). Where inquiry and challenge are absent, gains stall even with time and agendas in place. For example, a Year-5 PLC analyses student writing but avoids probing why conventions are not transferring to independent work. The facilitator switches to structured protocols, such as noticing or hypothesis testing with work samples, that legitimate disagreement and evidence-seeking. Within weeks, the team pilots a shared mini-lesson routine and common formative checks, which is an observable shift from exchange to knowledge-building dialogue (Hendrickx et al., 2025; Hudson, 2024).

Trust as a Linchpin Mechanism

The synthesis identifies relational trust as a cross-cutting mechanism linking leadership to PLC team functionality. New analyses show trust explains a large share of variance (≈46–60%) in PLC team functionality, establishing it as a proximal driver of whether teams function as

International Journal of Education, Psychology and Counseling
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Volume 11 Issue 63 (June 2026) PP. 473-490

communities of practice (Wood et al., 2024). At the school level, leadership practices that cultivate vulnerability-safe norms and redistribute voice are more likely to strengthen trust and thereby improve PLC functioning (Gu et al., 2025). Practically, this implies that technical fixes without relational work are unlikely to move teams toward the bullseye. For example, in a cluster of primary schools, leaders rotate meeting chairs and co-construct team norms. Over time, teams become willing to expose student errors and try each other's strategies, which strengthens collective efficacy and accelerates joint problem-solving.

Motivation as a Pathway to Sustained Engagement

Anchoring the horizontal axis (Control → Commitment) in Self-Determination Theory (SDT) (Ryan & Deci, 2017) explains why PLCs built on mandate and surveillance often fade as controlled motivation can secure attendance but undermines durable, high-quality participation. A 36-study meta-analysis shows autonomy-supportive designs reliably enhance autonomy and competence, providing a mechanism for sustained effort in collaborative inquiry (Wang et al., 2024). Related SDT syntheses reinforce that autonomous (vs. controlled) motivation associates with better achievement and lower anxiety, strengthening the case for moving PLC climates rightward toward commitment (Alamer et al., 2025). System indicators also point in the same direction: TALIS 2024/2025 links teacher autonomy and voice to improved well-being and adaptive instruction, which are the conditions that sustain PLC work across cycles (OECD, 2025).

Diagnostic Use: Locating and Moving PLCs Across Quadrants

Superimposing the axes on the rings yields four diagnostic quadrants that account for common failure modes and prescribe targeted remedies. PLCs often stall in Directive–Compliance (tight structures, low trust/ownership) or Collaborative–Compliance (strong collegiality, weak routines), whereas movement toward Collaborative–Commitment occurs when leaders sequence supports, where first protecting time or routines, then intentionally coaching for autonomy-supportive facilitation and efficacy-building routines (Liu et al., 2024; Wang et al., 2024). The framework thus functions as a practical diagnostic: it reveals whether stagnation is predominantly structural (outer-ring deficits) or psychological (inner-ring deficits), guiding improvement design with greater precision than generic PLC implementation checklists (Hudson, 2024).

Boundary Conditions and Contextual Fit

In this study, there are two boundary conditions that emerge. First, collaboration quality matters more than frequency. For example, mandating weekly meetings without autonomy-supportive facilitation depresses agency and can entrench compliance cultures (Hendrickx et al., 2025; Wang et al., 2024). Second, implementation is path-dependent, where nascent PLCs may temporarily benefit from clearer structure and leader-led protocols, while mature PLCs profit from distributed leadership and flexible agendas (Hudson, 2024). Notably, studies in challenging contexts show that extended PLCs connecting internal and external networks advance equity aims when anchored in trust and co-responsibility, underscoring that the model travels but must be enacted with attention to local conditions (Olmo-Extremera et al., 2025).

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Importantly, the findings challenge reductionist interpretations of PLC implementation that equate collaboration frequency with professional learning quality. The synthesis demonstrates that PLC effectiveness is not produced by structural compliance alone, but by the dynamic interaction between organizational architecture and professional psychology. This finding extends existing PLC scholarship by arguing that structures operate primarily as enabling conditions rather than direct causal mechanisms. Without relational trust, efficacy beliefs, and autonomy-supportive climates, PLC routines risk becoming performative organizational rituals rather than authentic sites of inquiry and instructional transformation. As a result, the study reframes PLC effectiveness as a socio-psychological process rather than a purely managerial or procedural phenomenon.

Implications for Leadership and Research

For leadership practice, the evidence suggests a sequenced strategy: (a) secure structural preconditions (time protection, protocols, resourcing), (b) train facilitators in autonomy-supportive moves and dialogic protocols, and (c) track proximal psychological indicators (trust, CTE, motivational climate) alongside participation metrics (Liu et al., 2024; Wang et al., 2024). For research, two priorities follow from this conceptual paper. First, mixed-methods longitudinal designs should estimate the joint effects of outer-ring and inner-ring variables on PLC outcomes and model mediated pathways to instructional improvement (Nguyen et al., 2024; Liu et al., 2024). Second, experimental and quasi-experimental trials should compare bundled PLC interventions, such as the combination of time, autonomy-supportive facilitation, and efficacy routines, against single-factor approaches to test additive or interactive benefits (Wang et al., 2024; OECD, 2025). Beyond school-level effects, multilevel studies show that school-level CTE reduces disruptive behaviour and moderates individual self-efficacy effects, implying potential spillovers from PLC development to school climate, which is an agenda worth pursuing in future PLC trials (Holter et al., 2026).

Conclusion

This conceptual paper set out to develop a diagnostic framework that explains the conditions under which Professional Learning Communities (PLCs) become effective, sustainable, and instructionally impactful, with a particular interest in distinguishing the structural and psychological mechanisms that support or hinder PLC implementation. The findings of the synthesis process directly address this research objective. First, the study finds that PLC effectiveness depends on the simultaneous alignment of two domains: (i) Organizational factors, such as protected collaboration time, coherent routines, resource allocation, and facilitative leadership; and (ii) Individual psychological factors, particularly relational trust, collective teacher efficacy, and autonomous motivation. This dual-condition requirement is strongly supported in the literature, which shows that structural enablers alone are insufficient for sustained professional learning, and that psychological safety and efficacy are decisive for productive inquiry and collaboration.

Second, this study proposes and introduces the Concentric Ring Model, clarifying how PLC improvement is often derailed not because conditions are absent, but because inner-ring and outer-ring conditions are misaligned. This model contributes to an understanding of PLC variability by demonstrating that many implementation failures arise from imbalances. For example, well-designed structures paired with low trust, or highly motivated teachers lacking

organizational support. This finding responds directly to the research objective by offering a theoretically grounded way to diagnose the precise source of PLC stagnation. The primary theoretical contribution of this study lies in reframing PLC effectiveness as a multi-dimensional alignment problem involving both organizational and psychological conditions. By integrating PLC scholarship, Self-Determination Theory, and Collective Teacher Efficacy research into a unified diagnostic framework, the study advances current understanding beyond procedural implementation models toward a more explanatory account of sustainable professional collaboration. Practically, the Concentric Ring Model offers school leaders an evidence-aligned diagnostic lens capable of identifying specific developmental constraints and designing targeted interventions responsive to contextual needs. Consequently, the model contributes not only to PLC conceptualization but also to the broader discourse on sustainable school improvement, collaborative professionalism, and instructional transformation.

In conclusion, this Concentric Ring Model thus provides both an explanatory lens and a diagnostic tool, equipping school leaders, researchers, and policymakers to better understand, evaluate, and enhance PLC implementation. Future empirical work may validate and refine this model, but its current formulation already strengthens the conceptual and practical foundations of PLC development in Malaysia and beyond.

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