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BRIDGING CLASSROOM PRACTICE AND SYSTEMIC CHANGE: A DUAL-AXIS QUADRANT MODEL FOR PROFESSIONAL LEARNING COMMUNITIES

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Abstract:

This conceptual study introduces a dual-axis quadrant model for teacher professional development that integrates both instructional and systemic interventions with reflective and collaborative approaches. Grounded in a literature review on Professional Learning Communities and collaborative practices, the model was developed through stakeholder consultations and an iterative conceptual mapping process. The dual axes, (i) Focus of Effort and (ii) Approach, differentiate interventions that directly enhance classroom practices from those that drive system-wide reform, and reflective practices from collaborative, action-oriented strategies. Thirteen professional development activities, including Lesson Study, Peer Coaching, Learning Walks, Video Critique, Teacher Sharing Sessions, Teacher Study Groups, Book Clubs, Critical Friends Groups, Curriculum Mapping, Common Assessments, Data Analysis, Problem Solving Groups, and Horizontal and Vertical Teams, were strategically categorized into four clusters corresponding to the quadrant's four regions. Findings indicate that teachers value immediate, reflective interventions that improve instructional practices, while experts stress the necessity of systemic, collaborative strategies for sustainable educational change. The model not only synthesizes theoretical constructs from self-efficacy, reflective practice, and communities of practice, but also offers a pragmatic diagnostic tool for designing balanced and contextually responsive professional development programs. By uniting reflective inquiry with collaborative action, the quadrant model addresses the persistent fragmentation in teacher professional development, ensuring that interventions meet both individual and systemic needs. In conclusion, this comprehensive framework has the potential to enhance teacher efficacy, foster continuous

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professional growth, and drive long-term educational reform, leading to improved student outcomes and a more resilient educational system.

Keywords:

Teacher Professional Development, Dual-Axis Quadrant Model, Professional Learning Communities

Introduction

Over the past several decades, the landscape of teacher professional development has undergone a significant transformation, shifting from traditional, top-down models to dynamic, teacher-driven approaches that emphasize collaborative inquiry and reflective practice (Rarasati & Pramana, 2023). Despite the proliferation of professional learning communities (PLCs) and similar initiatives, many schools struggle with fragmented interventions that address classroom-level practices or systemic reform, but rarely both. This disjointed approach impedes sustained instructional improvement and limits the potential for transformative educational change. The problem, therefore, lies in the absence of a comprehensive framework that integrates targeted, reflective interventions with broader, collaborative, and systemic strategies to support teacher growth and school reform. While previous research has predominantly focused on Asian and Middle Eastern contexts, emerging studies from Europe and Western contexts now shed light on comparable trends in teacher professional development and digital education innovation. Therefore, this study aims to formulate conceptually a dual-axis quadrant model that draws on past research and perspectives from experts. Formulating this conceptual model not only addresses the challenges of instructional practice and teacher efficacy but also aligns with broader organizational and systemic reforms necessary for sustainable educational improvement.

Literature Review

Evolution of Professional Learning Communities (PLCs) and Collaborative Practices

The evolution of Professional Learning Communities (PLCs) and collaborative practices over the past few decades has fundamentally reshaped how educators engage in professional development, teacher learning, and school reform. Early models emphasized top-down professional development; however, the shift toward collaborative inquiry and shared leadership has redefined PLCs as dynamic, teacher-driven communities of practice (Carpenter, 2018). In these communities, educators are not mere recipients of externally imposed expertise; rather, they are active agents whose self-directed learning and reflective collaboration foster both instructional innovation and transformative professional growth (Avgitidou et al., 2024).

A key element in this evolution is the redefinition of the learning space from a sole physical environment to one that values both intellectual and virtual collaboration. Purposely designed physical settings that encourage interaction and shared inquiry are essential (Carpenter, 2018). Simultaneously, digital and virtual platforms have emerged as vital components, enabling educators to overcome geographic and temporal constraints and thus broadening participation and collaboration (Bedford, 2019). Such platforms facilitate reflective dialogue and the de-privatization of teaching practices, which are central to the formation of effective PLCs (Carpenter & Munshower, 2019).

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Beyond the configuration of spaces, shared leadership and collegial trust have become recognized as cornerstones for successful PLCs. Research indicates that when leadership is distributed and teachers collaboratively set goals and share responsibilities, there is a marked improvement in both teacher efficacy and student outcomes (Benoliel & Schechter, 2017; Jones & Thessin, 2017). Open, reflective conversations, which are identified by Sims and Penny (2014) as essential for effective Professional Learning Communities (PLCs), help create a culture where professional inquiry becomes a catalyst for continuous improvement. Additionally, effective PLCs provide a "critical friend" environment where educators challenge assumptions and refine their practices through rigorous feedback and collective analysis (Avgitidou et al., 2024; Woodland & Mazur, 2018). However, the evolution of PLCs has not been without its challenges. Research has highlighted impediments to the development of robust PLCs, including structural issues, lack of time, and insufficient systemic support for teacher collaboration (Zhang et al., 2016). In response, innovative models have sought to integrate tailored professional development approaches with strategies for overcoming logistical obstacles. In contrast, some PLC models emphasize integrating project-based learning to explicitly link teacher collaboration with classroom innovation and student engagement.

Research from the United States and Europe has underscored the role of distributed leadership and data-informed collaboration in sustaining PLCs (Benoliel & Schechter, 2017; Jones & Thessin, 2017), while studies in the UK and the Netherlands have highlighted the integration of action research and curriculum co-design as mechanisms for systemic reform (Perry & Boylan, 2017; Rumiantsev et al., 2023). Additionally, Western literature has emphasized the importance of digital platforms in expanding access to professional learning, particularly in post-pandemic contexts (Bedford, 2019). Antinluoma et al. (2021) conducted a qualitative multiple-case study in Finland, highlighting how visionary leadership, shared decision-making, and co-teaching practices fostered effective PLCs. Their findings emphasize the importance of mutual trust and collaborative structures in sustaining professional learning.

Moreover, variations in satisfaction with PLC initiatives across different contexts, such as those observed in higher education and specialized disciplines, underscore the need for adaptive models that cater to specific institutional cultures and teacher needs (Alrahaili, 2023). In summary, the evolution of PLCs and collaborative practices is characterized by a shift from traditional, hierarchical professional development models toward more participatory, reflective, and inquiry-based frameworks. This shift has been facilitated by innovations in both physical and digital learning environments, the embrace of distributed leadership, and a robust culture of reflective practice and mutual accountability among educators. As ongoing research continues to refine these models, the potential for PLCs to serve as powerful engines for professional growth and educational reform remains significant.

Key Theoretical Perspectives on Teacher Professional Development

Aligning with the evolution, the key theoretical perspectives on teacher professional development (PD) have evolved from earlier behavioral and top-down models to more dynamic, constructivist, and collaborative approaches that position teachers as active agents in their learning. Current theories emphasize a multiplicity of interrelated components such as self-efficacy, reflective practice, communities of practice, and contextual responsiveness. One influential theoretical perspective is rooted in self-efficacy theory. Research highlights that teachers' beliefs about their capabilities are critical to the design of effective PD programs.

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Self-efficacy theory, originally grounded in social cognitive theory, posits that enhancing teachers' confidence through opportunities for mastery, modeling, and feedback can lead to improved instructional practices and student outcomes. In integrated STEM education, for example, increases in teacher self-efficacy have been linked to higher motivation and a greater willingness to experiment with innovative pedagogical strategies (Marlina et al., 2024; Kelley et al., 2020).

Another significant perspective is that of reflective practice and transformational learning. The use of video observation and reflective dialogue in PD provides a mechanism for teachers to view classroom practices from new perspectives and rethink their approaches without substituting the experience of teaching. Transformational learning theory further supports this, emphasizing that critical reflection leads to shifts in underlying assumptions and the formation of a more inclusive, dialogic, and sustainable professional practice. Peer discussions and reflective inquiry are essential for probing one's actions and beliefs, which fosters professional growth and innovation (Gaudin & Chaliès, 2015; Borko et al., 2010). Communities of practice (CoP) have also provided an important framework for understanding teacher professional development. The CoP perspective suggests that learning occurs through active participation and social interaction among educators who share common goals and values. This theory highlights the importance of collaborative inquiry and shared responsibility, wherein teachers pool their knowledge, engage in dialogue, and co-construct meaning from their experiences. In this context, Professional Learning Communities (PLCs) emerge as a prominent model that supports ongoing teacher development by cultivating networks of support, trust, and shared learning. Such communities empower teachers to become reflective practitioners who continuously challenge and extend their instructional practices through collective effort (Quadros & Carreira, 2024; Li, 2019).

Furthermore, theory-informed PD approaches increasingly draw on action research and participatory methodologies. By involving teachers in systematic inquiry into their practices, PD programs help them understand the contextual factors that influence their work and generate solutions that are relevant to their specific environments. Action research frameworks encourage an iterative process where planning, acting, observing, and reflecting are integrated into the fabric of daily teaching, thereby promoting adaptive expertise and professional agency. These participatory approaches foster empowerment among educators, making them stakeholders in educational reform and curricular innovation (Hajisoteriou et al., 2018; Dhungana et al., 2021). The role of mentoring and collaborative partnerships is another key theoretical lens in teacher PD. Scholars have observed that the integration of mentoring relationships into PD frameworks aids in constructing professional knowledge by bridging the gap between theory and practice. Mentoring, when embedded within structured collaborative contexts, can enhance teacher learning by providing opportunities for feedback, shared inquiry, and the deconstruction of tacit knowledge. Collaborative mentoring is thus not only a supportive mechanism but also a transformative process that facilitates sustained professional growth (Aderibigbe, 2013; Perry & Boylan, 2017).

Lastly, teacher PD is increasingly being examined through the lens of curriculum design and contextual adaptation. Research into collaborative curriculum design emphasizes that teacher learning is inherently social and distributed. Such frameworks argue that PD should not only be responsive to the institutional and cultural contexts of the teachers but also be designed to promote iterative feedback loops between classroom practice and curriculum innovation. The

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interplay between curricular demands and professional growth necessitates a systemic approach that integrates local contexts, collaborative learning, and reflective practice within a unified framework (Voogt et al., 2018). In summary, key theoretical perspectives on teacher professional development converge on several major themes: the enhancement of teacher self-efficacy, the critical role of reflective practice and transformational learning, the benefits of collaborative communities of practice, the empowerment derived from participatory and action research methodologies, the significant impact of mentoring relationships, and the importance of contextualized, collaborative curriculum design. Together, these theoretical perspectives provide a comprehensive view that informs the design and implementation of effective teacher PD programs aimed at fostering sustained instructional improvement and professional development.

Prior Research on Instructional versus Systemic Interventions

Prior research on teacher professional development distinguishes between interventions that focus directly on classroom instructional practices (instructional interventions) and those that target broader systemic change (systemic interventions). Both approaches have been examined extensively in the literature. However, they function at different levels and through distinct mechanisms to effect change in educational settings. Instructional interventions typically target specific teaching practices by providing direct support through coaching, mentoring, curriculum resources, and focused professional development sessions. For example, Kraft et al. (2018) conducted a meta-analysis that demonstrated teacher coaching interventions generate large positive effects on classroom instruction and moderate gains in student achievement.

Similarly, Lee et al. (2016) reported that a standards-based, inquiry-oriented science intervention enhanced elementary teachers' science knowledge and instructional practices, particularly benefiting English language learners. Virtual mentoring and coaching initiatives, as documented by Singer et al. (2023), further illustrate that targeted interventions can successfully improve pedagogical practices in response to specific challenges such as those imposed by the COVID-19 pandemic. In addition, studies focused on subject-specific improvements in teacher practice, such as the Integrated Literacy Study Group PD program outlined by Benner et al. (2022) and the use of data-driven practices to improve mathematics teaching noted by Christman et al. (2016), reinforce the notion that instructional interventions yield tangible changes in classroom behavior by offering teachers structured models, ongoing feedback, and opportunities for iterative practice.

In contrast, systemic interventions encompass a broader range of activities aimed at transforming the educational environment and institutional conditions under which teachers work. These interventions often include reforms in leadership practices, collaborative decision-making processes, and the creation of professional learning communities (PLCs) that support sustained improvement across schools. Harris and Jones (2010) argue that PLCs represent a potent strategy for systemic improvement by fostering a culture of collaboration and continuous learning, which in turn leads to systemic change. Further, studies by Kilag and Sasan (2023) and Polatcan et al. (2023) highlight the critical role of instructional leadership in shaping system-wide professional development, thereby advancing both teacher effectiveness and overall school performance. Lee et al. (2011) similarly show that teacher empowerment through curriculum reform efforts can lead to improved educational outcomes, even when these interventions expose tensions related to decision-making autonomy. Moreover, research by Lesh et al. (2021) on multitiered systems of support underscores the need for systemic

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interventions that cultivate team building, collaboration, and shared responsibility among school staff to become a necessary precondition for meaningful instructional change. Foster (2023) also emphasized the need for policy frameworks that balance system-level digital PD provision with teacher-led innovation, based on studies across Europe and North America.

Importantly, prior research suggests that instructional and systemic interventions are not mutually exclusive but interdependent. Networked professional learning communities, for example, serve as a bridge between the two levels by creating platforms in which targeted instructional support is embedded within a broader, collaborative culture that promotes systemic change (Pan & Chen, 2023). Hutchison and Woodward (2013) further explain this point by discussing how a planning cycle for integrating digital technology into literacy instruction must address both the immediate instructional needs and the larger systemic barriers, such as the lack of meaningful professional development opportunities, that inhibit effective technology integration. In summary, prior research delineates a dual-axis approach: instructional interventions directly support classroom practices through coaching, curriculum innovation, and data-informed strategies, whereas systemic interventions focus on establishing favourable leadership conditions, collaborative structures, and school-wide reforms. Effective teacher professional development, therefore, may benefit most from a synergistic design that integrates targeted instructional strategies within a supportive systemic framework, enabling both immediate classroom improvements and longer-term educational reform.

Reflective versus Action-Oriented Approaches in Professional Development

Reflective and action-oriented approaches represent two interrelated yet distinct paradigms in teacher professional development that together strive to enhance both the internalization of pedagogical beliefs and the practical enactment of instructional strategies. Reflective approaches emphasize metacognitive analysis, critical introspection, and a teacher's capacity to derive meaning from their classroom experiences. These approaches encourage educators to engage in self-directed inquiry through journaling, debriefing sessions, and guided discussion. Uştuk and Costa (2020) illustrate how lesson study can foster "meta-action" by promoting reflective practice that empowers teachers to make decisions about their development. Agustin (2019) supports this, showing that reflective journals serve as effective self-directed tools, enabling pre-service teachers to translate reflection into actionable insights that enhance teaching practices. Aldahmash et al. (2017) also suggest that reflective practices not only facilitate a deep understanding of one's instructional methods but also foster a sustained commitment to continuous improvement by creating a reflective habit that informs everyday classroom decisions.

In contrast, action-oriented approaches in professional development are characterized by active experimentation, systematic inquiry, and collaborative cycles of planning, acting, observing, and refining practice. These approaches are operationalized through methodologies such as collaborative action research and lesson study, wherein teachers engage directly with the process of implementing and testing new instructional strategies. Rumiantsev et al. (2023) detail how action research cultivates an inquiry stance among educators, leading to transformative changes in their pedagogical knowledge and the development of new perspectives on teaching and learning. Similarly, Messiou (2018) and Kijkuakul (2019) demonstrate that collaborative action research promotes reflective dialogue while propelling teachers into active partnerships that emphasize practical experimentation and iterative enhancement of instructional methods.

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Despite these differences, reflective and action-oriented approaches are not mutually exclusive; they are often integrated into cohesive professional development models. For instance, lesson study, as examined by Uştuk and Costa (2020) and Chow (2016), inherently combines reflective dialogue with actively testing pedagogical innovations. This integrated model underlines the notion that while reflective processes enable teachers to deconstruct and understand their practices, the subsequent application of this reflection through action-oriented strategies solidifies pedagogical change. In summary, reflective approaches in teacher professional development provide the theoretical and introspective foundation for teachers to critically assess and understand their instructional contexts, enhancing their agency and metacognitive skills (Uştuk & Costa, 2020). Conversely, action-oriented approaches prioritize the cyclical, collaborative, and iterative application of new strategies to achieve tangible changes in classroom practice (Rumiantsev et al., 2023). The convergence of these approaches, as evidenced by models that integrate reflective discussion with action research (Uştuk & Costa, 2020), constitutes a comprehensive professional development framework that leverages the strengths of both paradigms to drive sustained educational improvement.

Methodology

In this conceptual study, we employed a multi-phase methodology combining a literature review, expert validation, and iterative conceptual mapping to develop the quadrant model. Initially, we reviewed past studies on professional learning communities and collaborative professional development to identify key dimensions influencing teacher development and systemic change. This review revealed two principal continua: (i) Focus of Effort, ranging from direct, classroom-level instructional interventions to broader, system-wide initiatives, and (ii) Approach, spanning reflective practices to collaborative, action-oriented processes. Guided by these dimensions, we operationalized each continuum through definitions: the Instructional end was characterized by activities such as lesson study and peer coaching that focus on immediate classroom practice, whereas the Systemic/Organizational end encompassed processes like curriculum mapping and data analysis that influence school-wide or district-level change. Similarly, reflective practices were defined as activities centered on introspection and self-assessment, while collaborative action was aligned with group-based, solution-oriented planning. In this study, stakeholder consultations were conducted with ten domain experts, including school leaders, policymakers, and experienced teachers, who were purposively sampled for their relevant expertise in the field. Invitations were extended via email, accompanied by detailed study information to ensure transparency and informed participation. The consultation data were analysed thematically, with emergent themes informing an iterative mapping process used to refine and validate the categorization within the quadrant model. All consultations adhered to institutional and international ethical standards. Informed consent was obtained from all participants prior to data collection. Experts mapped various professional development clusters onto this two-axis framework, using qualitative feedback and pilot data to refine the positioning of each cluster. The resulting quadrant model not only synthesizes theoretical insights but also provides a pragmatic tool for aligning professional learning communities with strategic educational outcomes.

Findings

The iterative process revealed that the two dimensions, (i) Focus of Effort and (ii) Approach, are fundamental in categorizing professional development interventions. Through a comprehensive literature review and extensive stakeholder consultations, we confirmed that activities designed to enhance classroom practice, such as lesson study and peer coaching,

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consistently align with an instructional focus. In contrast, initiatives aimed at systemic improvement, like curriculum mapping and data analysis, emerged as distinct from classroom-level practices. Similarly, the analysis highlighted a clear demarcation between reflective approaches, which prioritize individual or small-group introspection, and collaborative, action-oriented strategies that foster collective problem solving. Through this mapping process, we categorized thirteen professional learning community (PLC) activities into four distinct clusters, offering a structured lens to analyze their focus, collaborative depth, and systemic orientation: (i) Observation and Reflective Practices, (ii) Collaborative Discussion and Professional Learning, (iii) Curriculum, Assessment, and Data Analysis, and (iv) Team Collaboration and Problem Solving.

i. Cluster 1: Observation and Reflective Practices encompasses activities such as Lesson Study (LS), Peer Coaching (PC), Learning Walks (LW), and Video Critique (VC). These initiatives emphasize the importance of classroom observation and structured reflection to enhance pedagogical strategies and deepen instructional awareness.

ii. Cluster 2: Collaborative Discussion and Professional Learning includes Teacher Sharing Sessions (TSS), Teacher Study Groups (TSG), Book Clubs (BC), and Critical Friends Groups (CFG). These activities foster dialogic engagement and collegial learning, allowing teachers to co-construct knowledge, exchange resources, and engage in reflective discourse grounded in practice.

iii. Cluster 3: Curriculum, Assessment, and Data Analysis comprises Curriculum Mapping (CM), Common Assessments (CA), and Data Analysis (DA). This cluster prioritizes coherence in instructional planning and the strategic use of assessment data to inform and differentiate teaching.

iv. Cluster 4: Team Collaboration and Problem Solving, which includes Problem Solving Groups (PSV) and Horizontal and Vertical Teams (HVT), highlights the value of collective inquiry and strategic teamwork in addressing instructional and systemic challenges.

Participants in this conceptual study noted that the quadrant model provided a framework to evaluate existing professional development practices and to strategically design interventions that address both immediate instructional needs and broader systemic goals. The findings of this study not only validate the dual-axis framework (see Figure 1) but also highlight its potential as a diagnostic and planning tool for targeted professional learning initiatives through PLCs.

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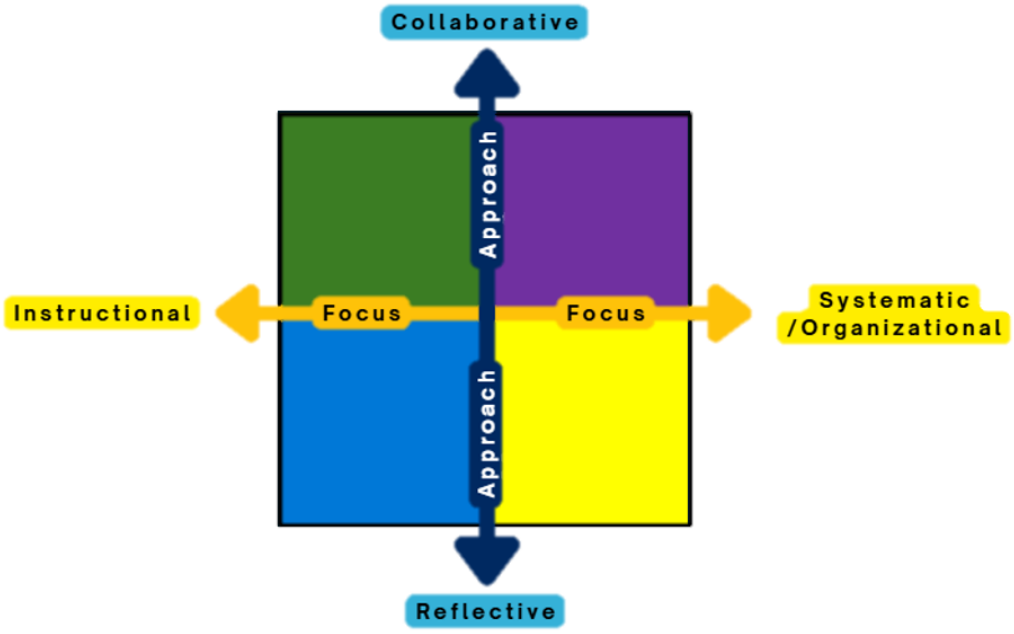

Figure 1: The Dual-Axis Framework of the Quadrant Model

Figure 1 visually positions 13 PLC activities recognized by the Ministry of Education within the four quadrants: Instructional-Reflective, Instructional-Collaborative, Systemic-Reflective, and Systemic-Collaborative. Each quadrant is represented by a colour for clarity and thematic emphasis. For the quadrant, Instructional–Reflective (Blue), the activities focused on individual teacher introspection and classroom practice enhancement. For quadrant Instructional–Collaborative (Green), the activities promote co-construction of knowledge and shared pedagogical development. For the quadrant Systemic–Reflective (Yellow), the activities encourage strategic reflection on broader school-wide processes and alignment. For the quadrant Systemic–Collaborative (Purple), the activities emphasize collective leadership, cross-team coordination, and institutional transformation. This mapping is further detailed in Table 1, which outlines each activity's dominant orientation, expected teacher agency, and potential for systemic scalability.

Table 1: Findings of Expert Validation and the Outcomes of the Iterative Conceptual Mapping Process

Dimension /Category	Expert Validation Findings	Iterative Mapping Outcome
Focus of Effort – Instructional	Teachers emphasized that activities directly linked to classroom practice (e.g., lesson study, peer coaching, and learning walks) have an immediate impact on teaching.	Clusters focused on Observation & Reflective Practices and Collaborative Discussion & Professional Learning were positioned on the instructional end of the continuum.
Focus of Effort – Systemic	Administrators and curriculum specialists stressed the need for school-wide strategies, such as curriculum mapping, common	Clusters encompassing Curriculum, Assessment & Data Analysis, and Team Collaboration & Problem Solving were mapped toward the systemic end, highlighting their

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	assessments, and data analysis, to drive systemic change.	broader impact on educational systems.
Approach – Reflective	Participants reported that reflective practices (like video critiques, self-assessments, and data reflections) were essential for individual professional growth.	Components emphasizing reflection were mapped into the reflective quadrant, particularly within the Observation & Reflective Practices cluster and aspects of data analysis in the systemic cluster.
Approach – Collaborative	Stakeholders valued collaborative, action-oriented strategies, such as professional learning communities, teacher sharing sessions, and joint problem-solving, for collective impact.	Clusters involving Collaborative Discussion & Professional Learning and Team Collaboration & Problem Solving were positioned in the collaborative quadrant, underscoring their group-based focus.

Discussion

The dual-axis quadrant model demonstrates that a multidimensional approach to professional development is both theoretically sound and practically essential. Stakeholders consistently highlight the need for balanced interventions that simultaneously target immediate classroom practices and broader systemic change. This is supported in the literature, where early top-down PD models have given way to dynamic, teacher-driven communities of practice that emphasize both reflective inquiry and collaborative action (Carpenter, 2018; Avgitidou et al., 2024). The mapping process revealed that PLC activities such as Lesson Study, Peer Coaching, Learning Walks, and Video Critique, when positioned in the Instructional/Reflective quadrant, directly impact classroom practice by encouraging deep individual reflection. In contrast, interventions like Curriculum Mapping, Common Assessments, and Data Analysis are critical for driving systemic or organizational reform, situating them within the Systemic/Reflective quadrant. Meanwhile, teacher sharing sessions, study groups, and critical friend groups exemplify the Instructional/Collaborative quadrant by harnessing collective dialogue to refine instructional strategies, and the Problem-Solving Groups, along with Horizontal & Vertical Teams, fall in the Systemic/Collaborative quadrant, where coordinated team efforts address school-wide challenges.

The dual-axis framework, therefore, not only aligns with the theoretical perspectives of self-efficacy, reflective practice, and communities of practice (Gaudin & Chaliès, 2015; Sims & Penny, 2014) but also offers a pragmatic diagnostic tool that helps educational leaders in evaluating and enhancing professional learning practices. However, given its conceptual nature, it is essential to acknowledge that claims of practical utility should remain provisional until validated by empirical evidence. To ensure the model's relevance and applicability, future research should prioritise rigorous pilot testing across diverse educational contexts and participant groups. Such empirical studies will help to refine the model, confirm its diagnostic capacity, and determine its impact on bridging classroom practice and systemic change. By bridging reflective and collaborative action-oriented strategies, the quadrant model supports a comprehensive approach to teacher professional development, one that acknowledges the interplay between micro-level instructional adjustments and macro-level systemic change. This

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alignment facilitates data-driven improvement cycles, enhances teacher efficacy through collaborative feedback, and ultimately fosters an environment of continuous improvement and innovation. As the experts and iterative mapping have confirmed, integrating the thirteen PLC activities into this continuum enables schools to strategically design, implement, and scale professional development initiatives that are both contextually responsive and aligned with long-term educational reform goals.

Limitations and Scope

While the dual-axis quadrant model offers a valuable lens for categorizing and analyzing PLC activities, several limitations must be acknowledged. Firstly, the study primarily relies on document analysis and expert validation, without empirical implementation in real-world school settings. This limits the model's practical validation, as its effectiveness in influencing actual teacher practices or systemic change has not yet been observed or measured. Secondly, the alignment of PLC activities within the quadrant model involved subjective interpretation based on available descriptions and theoretical alignment. These classifications, while guided by literature and expert input, may not fully capture contextual nuances across different schools, districts, or national education systems. The model's generalizability may therefore vary depending on cultural, structural, or policy contexts. Third, while this study presents a synthesized conceptual framework, we acknowledge that the absence of empirical testing or pilot implementation data limits the generalizability and practical validation of the model. This remains a significant constraint, as the framework's utility in real educational settings is, at this stage, speculative.

Future Suggestions

Future research should include pilot studies across varied contexts to test, refine, and validate the proposed dual-axis quadrant model. This expanded limitation clarifies the scope of our claims and underlines the need for empirical inquiry to substantiate the model's practical application. Empirical investigations should be conducted to operationalize the dual-axis quadrant model in various educational environments to address the limitations of the generalizability of this study. Particularly, case studies in different school environments, including urban, rural, and high-performance against under-resourced, as well as pilot studies, would provide vital information on the usability, contextual fit, and influence on practice of the model. In-depth interviews with educators and school administrators, as well as classroom observations and feedback loops, should complement this applied research to provide complex viewpoints that might either dispute or support the quadrant placements. Such practitioner-informed data would help the model to be iteratively refined, hence improving its conceptual strength and field applicability. Furthermore, the creation of structured rubrics or alignment indicators would help to classify PLC activities more consistently, therefore lowering interpretive subjectivity and increasing dependability in many scenarios. Lastly, especially in terms of their capacity to encourage continuous changes in professional development culture, improve teacher agency, and support systemic coherence, longitudinal study designs are crucial to evaluate the influence over time of the model. These future suggestions not only solve methodological limitations but also enhance the possibility of the model to be a scalable and flexible framework for PLC development in many educational environments.

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Conclusion

In conclusion, this conceptual study presents a dual-axis quadrant model as a transformative framework for rethinking teacher professional development by integrating two critical dimensions: (i) Focus of Effort and (ii) Approach. This conceptual study indicates that aligning interventions along these continua enables educators to address both immediate instructional needs and broader systemic challenges. The experts and iterative mapping process validated those activities such as lesson study, peer coaching, and learning walks effectively enhance classroom practices through reflective inquiry, while initiatives like curriculum mapping, common assessments, and collaborative problem-solving drive systemic reform. Moreover, by embedding both reflective and collaborative dimensions into professional learning communities, this model not only reinforces established theories of self-efficacy and communities of practice but also provides a practical diagnostic tool for designing and scaling PD initiatives. In this study, the model offers practical utility for teachers, administrators, and policymakers seeking to design balanced PD ecosystems. It also holds potential for adaptation across diverse educational contexts, subject areas, and international settings where localized PLC structures exist. This framework also contributes to the discourse on professional development by offering a tool that integrates systemic reform with teacher-level agency. Future studies should explore its empirical application and iterative refinement through field-based validation. Thus, the quadrant model offers a comprehensive approach that empowers teachers to continuously improve their practices and fosters an educational culture of sustained innovation and reform.

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References

Aderibigbe, S. A. (2013). Opportunities of the collaborative mentoring relationships between teachers and student teachers in the classroom. *Management in Education, 27*(2), 70-74. https://doi.org/10.1177/0892020612471698

Agustin, A. (2019). Reflective journal as a self-directed and sustainable professional development tool for pre-service teachers: a case study in english language education study program. *Scholaria: Jurnal Pendidikan Dan Kebudayaan, 9*(2), 103-110. https://doi.org/10.24246/j.js.2019.v9.i2.p103-110

Aldahmash, A. H., Alshmrani, S. M., & Almufti, A. N. M. (2017). Secondary school science teachers' views about their reflective practices. *Journal of Teacher Education for Sustainability, 19*(1), 43-53. https://doi.org/10.1515/jtes-2017-0003

Alrahaili, M. (2023). The effectiveness of professional learning communities in the saudi efl context: teachers' perspective. *Journal of Educational Sciences and Humanities, 35.* https://doi.org/10.55074/hesj.vi35.927

Antinluoma, M., Ilomäki, L., & Toom, A. (2021). Practices of professional learning communities. *Frontiers in Education, 6*, Article 617613. https://doi.org/10.3389/feduc.2021.617613

Avgitidou, S., Karadimitriou, K., Ampartzaki, M., Sidiropoulou, C., & Καμπεζά, M. (2024). University teaching as a site for professional learning of teacher educators: the role of collaborative inquiry and reflection within a professional learning community. *Education Sciences, 14*(2), 207. https://doi.org/10.3390/educsci14020207

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume 7 Issue 25 (June 2025) PP. 947-961
DOI: 10.35631/IJMOE.725062
Bedford, L. (2019). Using social media as a platform for a virtual professional learning community. *Online Learning, 23*(3). https://doi.org/10.24059/olj.v23i3.1538

Benoliel, P., & Schechter, C. (2017). Is it personal? teacher's personality and the principal's role in professional learning communities. *Improving Schools, 20*(3), 222-235. https://doi.org/10.1177/1365480217703725

Benner, G. J., Filderman, M. J., Barnard-Brak, L., Pennefather, J., Smith, J. L. M., & Strycker, L. A. (2022). Evidence of efficacy of the integrated literacy study group professional learning program to enhance reading instruction for students with emotional and behavioral disorders. *Psychology in the Schools, 60*(1), 182-198. https://doi.org/10.1002/pits.22773

Borko, H., Koellner, K., Jacobs, J., & Seago, N. (2010). Using video representations of teaching in practice-based professional development programs. *ZDM, 43*(1), 175-187. https://doi.org/10.1007/s11858-010-0302-5

Carpenter, D. (2018). Intellectual and physical shared workspace. *International Journal of Educational Management, 32*(1), 121-140. https://doi.org/10.1108/ijem-05-2017-0104

Carpenter, D., & Munshower, P. (2019). Broadening borders to build better schools. *International Journal of Educational Management, 34*(2), 296-314. https://doi.org/10.1108/ijem-09-2018-0296

Chow, A. (2016). Teacher learning communities: the landscape of subject leadership. *International Journal of Educational Management, 30*(2), 287-307. https://doi.org/10.1108/ijem-07-2014-0105

Christman, J. B., Ebby, C. B., & Edmunds, K. A. (2016). Data use practices for improved mathematics teaching and learning: the importance of productive dissonance and recurring feedback cycles. *Teachers College Record: The Voice of Scholarship in Education, 118*(11), 1-32. https://doi.org/10.1177/016146811611801101

Dhungana, P., Luitel, B. C., Gjøtterud, S., & Wagle, S. K. (2021). Context-responsive approaches of / for teachers' professional development: a participatory framework. *Journal of Participatory Research Methods, 2(*1). https://doi.org/10.35844/001c.18869

Foster, N. (2023). Teacher digital competences: Formal approaches to their development. In *OECD Digital Education Outlook 2023*. OECD Publishing. https://www.oecd.org/en/publications/oecd-digital-education-outlook-2023_c74f03de-en/full-report/teacher-digital-competences-formal-approaches-to-their-development_4a05344c.html

Gaudin, C., & Chaliès, S. (2015). Video viewing in teacher education and professional development: a literature review. *Educational Research Review, 16*, 41-67. https://doi.org/10.1016/j.edurev.2015.06.001

Hajisoteriou, C., Maniatis, P., & Angelides, P. (2018). Teacher professional development for improving the intercultural school: an example of a participatory course on stereotypes. *Education Inquiry, 10*(2), 166-188. https://doi.org/10.1080/20004508.2018.1514908

Harris, A., & Jones, M. (2010). Professional learning communities and system improvement. *Improving Schools, 13*(2), 172-181. https://doi.org/10.1177/1365480210376487

Hutchison, A., & Woodward, L. (2013). A planning cycle for integrating digital technology into literacy instruction. *The Reading Teacher, 67(*6), 455-464. https://doi.org/10.1002/trtr.1225

Jones, C. M., & Thessin, R. A. (2017). Sustaining continuous improvement through professional learning communities in a secondary school. *Journal of School Leadership, 27*(2), 214-241. https://doi.org/10.1177/105268461702700203

International Journal of Modern Education
EISSN: 2637-0905
IJMOE
Volume 7 Issue 25 (June 2025) PP. 947-961
DOI: 10.35631/IJMOE.725062
Kelley, T. R., Knowles, J. G., Holland, J. D., & Han, J. H. (2020). Increasing high school teachers self-efficacy for integrated stem instruction through a collaborative community of practice. *International Journal of STEM Education, 7*(1). https://doi.org/10.1186/s40594-020-00211-w

Kijkuakul, S. (2019). Professional changes of primary science teachers: experience on collaborative action research in Thailand. *Asia-Pacific Science Education, 5*(1). https://doi.org/10.1186/s41029-019-0030-2

Kilag, O. K. T., & Sasan, J. M. (2023). Unpacking the role of instructional leadership in teacher professional development. *Advanced Qualitative Research, 1*(1), 63-73. https://doi.org/10.31098/aqr.v1i1.1380

Kraft, M. A., Blazar, D., & Hogan, D. (2018). The effect of teacher coaching on instruction and achievement: a meta-analysis of the causal evidence. *Review of Educational Research, 88*(4), 547-588. https://doi.org/10.3102/0034654318759268

Lee, J. C., Yin, H., Zhang, Z., & Jin, Y. (2011). Teacher empowerment and receptivity in curriculum reform in China. *Chinese Education &Amp; Society, 44*(4), 64-81. https://doi.org/10.2753/ced1061-1932440404

Lee, O., Llosa, L., Jiang, F., Haas, A., O'Connor, C., & Booven, C. D. V. (2016). Elementary teachers' science knowledge and instructional practices: impact of an intervention focused on english language learners. *Journal of Research in Science Teaching, 53*(4), 579-597. https://doi.org/10.1002/tea.21314

Lesh, J. J., Roberts, C., Cavitt, D., & Morales, D. (2021). Urban secondary school administrators and faculty perceptions of multitiered system of supports/response to intervention. *NASSP Bulletin, 105*(4), 225-249. https://doi.org/10.1177/01926365211060798

Li, H. (2019). From periphery to the core: promoting college english teachers' professional development from the perspective of community of practice. *English Language Teaching, 12*(9), 74. https://doi.org/10.5539/elt.v12n9p74

Marlina, R., Suwono, H., Ibrohim, I., Yuenyong, C., Husamah, H., & Hamdani, H. (2024). Theoretical frameworks of self-efficacy in collaborative science learning practices: a systematic literature review. *JPBI (Jurnal Pendidikan Biologi Indonesia), 10*(2), 602-615. https://doi.org/10.22219/jpbi.v10i2.33628

Messiou, K. (2018). Collaborative action research: facilitating inclusion in schools. *Educational Action Research, 27*(2), 197-209. https://doi.org/10.1080/09650792.2018.1436081

Pan, H. W., & Chen, W. (2023). Networked learning communities in promoting teachers' receptivity to change: how professional learning beliefs and behaviors mediate. *Sustainability, 15*(3), 2396. https://doi.org/10.3390/su15032396

Perry, E., & Boylan, M. (2017). Developing the developers: supporting and researching the learning of professional development facilitators. *Professional Development in Education, 44*(2), 254-271. https://doi.org/10.1080/19415257.2017.1287767

Polatcan, M., Özdemir, N., Kılınç, A. Ç., Zepeda, S. J., & Çevik, S. (2023). Leading teacher instructional practices in türkiye: do inner school conditions matter?. *Journal of Educational Administration, 61*(4), 341-361. https://doi.org/10.1108/jea-07-2022-0099

Quadros, V. C. D., & Carreira, S. (2024). Teachers, education, community and professional learning tasks: a texture for the construction of professional knowledge. *Focus on Education: Academic Research*. https://doi.org/10.56238/sevened2024.009-011

International Journal of Modern Education
EISSN: 2637-0905
IJMOE
Volume 7 Issue 25 (June 2025) PP. 947-961
DOI: 10.35631/IJMOE.725062

Rarasati, N., & Pramana, R. P. (2023). *Giving schools and teachers autonomy in teacher professional development under a medium-capability education system.* https://doi.org/10.35489/BSG-RISE- RI_2023/050

Rumiantsev, T., Rijst, R.V.D., Kuiper, W., Verhaar, A., & Admiraal, W. (2023). Teacher professional development and educational innovation through action research in conservatoire education in the Netherlands. *British Journal of Music Education*, 1-14. https://doi.org/10.1017/s0265051723000414

Singer, E. A., Irby, B. J., Pugliese, E., Elfaragy, H., Lara-Alecio, R., & Tong, F. (2023). Perceived effectiveness of virtual mentoring and coaching on teachers of english language learner's pedagogical practices during covid-19. *European Scientific Journal, ESJ, 19*(39), 33. https://doi.org/10.19044/esj.2023.v19n39p33

Sims, R. L., & Penny, G. R. (2014). Examination of a failed professional learning community. *Journal of Education and Training Studies, 3*(1). https://doi.org/10.11114/jets.v3i1.558

Uştuk, Ö., & Costa, P. I. D. (2020). Reflection as meta-action: lesson study and efl teacher professional development. *TESOL Journal, 12*(1). https://doi.org/10.1002/tesj.531

Voogt, J., Pieters, J. M., & Handelzalts, A. (2018). Teacher collaboration in curriculum design teams: effects, mechanisms, and conditions. *Teacher Learning Through Teacher Teams*, 7-26. https://doi.org/10.4324/9781315123431-2

Woodland, R. H., & Mazur, R. (2018). Examining capacity for "cross-pollination" in a rural school district: a social network analysis case study. *Educational Management Administration & Leadership, 47*(5), 815-836. https://doi.org/10.1177/1741143217751077

Zhang, J., Yuan, R., & Yu, S. (2016). What impedes the development of professional learning communities in China? perceptions from leaders and frontline teachers in three schools in Shanghai. *Educational Management Administration & Leadership, 45*(2), 219-237. https://doi.org/10.1177/1741143215617945