

A Conceptual Model of the Mediating Role of Professional Learning Communities in the Relationship between Learning-Centered Leadership and School Effectiveness in Malaysian Vocational Colleges

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Abstract

This conceptual paper proposes an integrative model explaining how Learning-Centered Leadership (LCL) influences School Effectiveness (SE), both directly and indirectly, through Professional Learning Communities (PLC) in Malaysian Vocational Colleges. Drawing on the Learning-Centered Leadership framework, the Professional Learning Community model and the Effective Schools correlates, the study synthesizes contemporary scholarship to develop a theoretically grounded model that responds to the complex instructional and organizational demands of Technical and Vocational Education and Training (TVET). While international research consistently demonstrates the role of learning-centered leadership in strengthening instructional quality and organizational performance, comparatively limited attention has been given to how these leadership processes operate within vocational education contexts, particularly in Malaysia. The proposed model positions Professional Learning Communities as the central organizational mechanism through which leadership inputs are transformed into collaborative teacher practice, instructional coherence and sustained professional learning. By explaining these relationships, the paper advances a context-specific theoretical explanation of how leadership and collective professional learning interact to support school effectiveness in TVET institutions. The paper concludes by outlining key theoretical, practical, and policy implications, including the conceptualisation of PLC as a mediating mechanism linking Learning-Centered Leadership to School Effectiveness, the provision of a strategic framework to guide leadership development and collaborative professional learning in vocational colleges, and empirical alignment with national TVET policies that emphasize learning-centered leadership and sustainable professional development.

Keywords: Learning-Centered Leadership (LCL), Professional Learning Community (PLC), School Effectiveness (SE), TVET Leadership, Vocational Colleges

Introduction

Leadership is widely recognized as one of the most influential factors at the school level that shape instructional quality and institutional effectiveness (Leithwood et al., 2020). Contemporary leadership scholarship increasingly emphasizes that school leaders contribute to educational improvement not merely through administrative management but through deliberate actions that shape teaching practices, professional learning and organizational culture. In Malaysia, this leadership imperative has become particularly salient as the Technical and Vocational Education and Training (TVET) sector undergoes substantial reform aligned with the Malaysia Education Blueprint 2013–2025 (Ministry of Education, 2013) and the National TVET Policy 2030 (Government of Malaysia, 2024). These policy frameworks emphasize instructional quality, teacher capacity development and collaborative professional culture as key drivers of institutional performance and graduate employability.

Malaysian Vocational Colleges operate within a distinctive and complex educational environment characterized by competency-based curricula, strong industry alignment and dual academic and technical teaching responsibilities. Unlike conventional schools, vocational institutions must integrate theoretical knowledge with practical skill development while responding to rapidly evolving labor market expectations. These contextual demands place heightened pressure on institutional leaders to prioritize teaching and learning while also managing administrative obligations and engaging with external stakeholders. Consequently, leadership approaches that explicitly foreground learning processes and instructional improvement are particularly relevant for vocational education settings.

Learning Centered Leadership (LCL) represents a leadership paradigm that places teaching and learning at the core of leadership practice. Learning-Centered Leadership, as conceptualized by Liu et al. (2016a), emphasizes leadership practices that prioritize teaching and learning by articulating a clear learning vision, providing instructional support, managing and monitoring instructional programs and modeling learning-oriented professional behaviors. In contrast to leadership models primarily concerned with managerial efficiency or organizational control, LCL positions leaders as active facilitators of professional learning and instructional coherence. Within the Malaysian context, local studies have highlighted the importance of leadership practices in shaping teacher professionalism, instructional quality and school improvement outcomes (Adams et al., 2021; Talebloo et al., 2017). However, empirical evidence also indicates that school and vocational leaders in Malaysia are frequently constrained by administrative workloads and systemic pressures, which limit their capacity to enact learning-focused leadership practices consistently (Ghavifekr et al., 2017).

While Learning-Centered Leadership provides a compelling framework for instructional improvement, leadership's influence on institutional outcomes is rarely direct. Leadership effects are commonly realized through organizational processes that structure teachers' professional interactions and learning experiences. Professional Learning Communities (PLC) have emerged as a central mechanism for fostering collaborative inquiry, shared practice and continuous professional development among educators (Hord, 1997; Stoll et al., 2006). In the Malaysian context, empirical studies have demonstrated that PLC practices contribute positively to teacher learning, instructional coherence and school improvement (Abdull Kareem & Mei Kin, 2021; Ismail et al., 2014; Ismail et al., 2020). Nevertheless, evidence suggests that PLC implementation across Malaysian institutions remains uneven, particularly

in vocational settings, where organizational culture, time constraints and varying leadership support pose significant challenges (Hassan et al., 2019; Pun & Mansor, 2022).

As collaborative professional learning strengthens instructional coherence and professional culture, it becomes conceptually essential to examine its contribution to broader institutional outcomes, particularly School Effectiveness. School effectiveness is commonly defined as the extent to which an institution achieves its intended educational outcomes by providing high-quality instruction, fostering positive learning environments and promoting continuous student progress (Lezotte & Snyder, 2011). In vocational education contexts, school effectiveness extends beyond academic performance to encompass mastery of technical skills, readiness for employability and the development of learning environments that support competency-based education. Malaysian scholars have increasingly emphasized the need for contextually grounded models of school effectiveness that account for leadership practices and organizational learning processes (Ghani, 2014; Hassan et al., 2024).

Despite growing international and local interest in Learning Centered Leadership and Professional Learning Communities, empirical research in Malaysia remains fragmented. Existing local studies tend to examine leadership practices or Professional Learning Communities as isolated constructs, primarily within primary and secondary school settings, with limited attention to vocational education institutions (Abdull Kareem & Mei Kin, 2021; Ismail et al., 2014; Ismail et al., 2020; Talebloo et al., 2017). Although recent Malaysian studies have begun to explore Learning Centered Leadership and Professional Learning Communities, these investigations primarily focus on direct relationships and do not sufficiently explain the organizational mechanisms through which leadership practices influence school effectiveness (Hassan et al., 2024; Tai & Omar, 2024). Moreover, empirical studies that integrate Learning Centered Leadership, Professional Learning Communities and school effectiveness within Malaysian Vocational Colleges remain notably scarce, despite the strategic role of TVET institutions in national education reforms (Abdull Kareem & Mei Kin, 2021; Adams et al., 2021).

The conceptual grounding of this paper integrates three established theoretical perspectives. Learning-Centered Leadership is conceptualized as the leadership input that shapes instructional focus and teacher professional growth. Professional Learning Communities are positioned as the organizational learning process that enables collaborative inquiry, reflective dialogue and shared instructional practice. School Effectiveness is framed through the Seven Correlates of Effective Schools, which describe the institutional conditions associated with sustained educational success (Lezotte & Snyder, 2011). By linking these perspectives, the paper offers a coherent theoretical explanation of how leadership practices are expected to influence school effectiveness through collective professional learning mechanisms in vocational education settings.

Accordingly, the objective of this conceptual paper is to develop an integrative and theoretically grounded model that explains the direct effect of Learning Centered Leadership (LCL) on School Effectiveness (SE) and the indirect effect of LCL on SE through Professional Learning Communities (PLC) in Malaysian Vocational Colleges. The scope of this paper is limited to synthesizing and integrating established frameworks, namely Learning Centered Leadership, Professional Learning Communities and the Effective Schools correlates to

propose theoretically informed and testable propositions for future empirical validation within the Malaysian TVET context (Hord, 1997; Lezotte & Snyder, 2011; Liu et al., 2016a; Murphy et al., 2007; Stoll et al., 2006). Specifically, this paper advances four propositions, namely (a) Learning Centered Leadership is positively associated with School Effectiveness, (b) Learning Centered Leadership is positively associated with Professional Learning Communities, (c) Professional Learning Communities are positively associated with School Effectiveness and (d) Professional Learning Communities mediate the relationship between Learning Centered Leadership and School Effectiveness.

Literature Review

A considerable and growing body of literature has investigated leadership, professional learning and institutional effectiveness within educational organizations. Over the past two decades, researchers have increasingly emphasized that sustainable school improvement depends not only on structural reforms but also on leadership practices that prioritize teaching and learning, as well as on collaborative professional cultures that support continuous improvement. Nevertheless, existing studies have often examined these constructs in isolation, resulting in fragmented theoretical explanations of how leadership practices are translated into organizational outcomes. Against this background, the present review synthesizes prior scholarship on School Effectiveness, Learning-Centered Leadership, and Professional Learning Communities to establish a coherent theoretical foundation for the proposed conceptual model. The review is organized sequentially, beginning with School Effectiveness as the institutional outcome, followed by Learning-Centered Leadership as the primary leadership input and Professional Learning Communities as the organizational learning mechanism through which leadership effects are realized. As the ultimate objective of leadership and professional learning initiatives is the enhancement of institutional performance, the discussion first turns to the concept of School Effectiveness.

School Effectiveness

School effectiveness refers to the extent to which a school succeeds in promoting high levels of student learning regardless of students' social or educational backgrounds. Early effectiveness research adopted a value-added perspective, suggesting that effective schools are those in which students achieve learning outcomes beyond what would be predicted by their initial levels of attainment (Mortimore, 1995). Over time, this narrow focus on academic outcomes has been broadened. Contemporary scholarship recognizes that effectiveness encompasses a broader set of organizational and instructional conditions, including student engagement, discipline, school climate and teacher commitment (Ackerman et al., 2022; Ghani, 2008; Hoy & Miskel, 2012). This expanded perspective reflects the view that effective schools operate as coherent systems in which leadership, curriculum, instruction and organizational culture are closely aligned. Within this literature, one of the most influential conceptual frameworks is the Seven Correlates of Effective Schools proposed by Lezotte and Snyder (2011). This framework identifies seven interrelated dimensions of effectiveness, namely (1) strong instructional leadership, (2) a clear and focused mission, (3) high expectations for success, (4) opportunity to learn and time on task, (5) frequent monitoring of student progress, (6) a safe and orderly environment, and (7) positive home-school relationships. These correlations suggest that school effectiveness is not attributable to a single factor, but instead emerges from the interaction between leadership practices, instructional processes and organizational climate.

In recent years, school effectiveness has remained a central theme in international education reform efforts (Reynolds & Teddlie, 2021), with regional studies further emphasizing the need to conceptualise effectiveness as a multidimensional construct shaped by contextual factors (Botha, 2010; Delgado-Galindo et al., 2024; Javornik & Klemenčič Mirazchiyski, 2023). Despite this extensive body of research, comparatively less attention has been directed towards understanding how school effectiveness is enacted within vocational education institutions. While traditional effectiveness correlates remain relevant, vocational settings are characterized by competency-based curricula, strong industry alignment and distinctive instructional arrangements that may influence how effectiveness is achieved and sustained (Mustapha & Hussain, 2024). Existing evidence also suggests a lack of comprehensive evaluations of institutional effectiveness within TVET colleges, with scholars calling for conceptual models that better reflect the organizational and pedagogical realities of vocational education (Bush et al., 2018; Ghani, 2014). These observations suggest that further theoretical integration is required to advance understanding of school effectiveness in vocational contexts. While School Effectiveness represents the desired institutional outcome, leadership practices play a central role in shaping the organizational conditions that enable such outcomes to emerge.

Learning-Centered Leadership

Learning-Centered Leadership has gained increasing prominence as a leadership paradigm that places teaching and learning at the core of organizational activity. In contrast to leadership approaches that prioritize administrative efficiency or managerial control, Learning-Centered Leadership emphasizes leadership actions that directly influence instructional quality, teacher learning and organizational coherence (Hallinger, 2011; Murphy, 2007). This shift reflects a broader trend in educational leadership research towards models that foreground learning as the primary purpose of schooling. The present study adopts the Learning-Centered Leadership framework articulated by Liu et al. (2016a) which conceptualises leadership as a multidimensional construct comprising four interrelated dimensions: (1) articulating and sustaining a clear learning vision, (2) managing and aligning instructional programs, (3) supporting teachers' professional learning and (4) modeling learning-oriented leadership practices. These dimensions collectively describe how leaders influence teaching and learning both directly and indirectly by shaping professional norms, expectations and instructional coherence across the organization.

A substantial body of research has demonstrated that leadership focused on learning is a critical factor in school improvement and reform. International frameworks consistently identify strong instructional leadership as a defining characteristic of effective schools (Lezotte & Snyder, 2011), while national policy documents emphasize leadership excellence as a key driver of educational quality and system-wide transformation (Ministry of Education, 2013). However, despite growing recognition of the importance of learning-focused leadership, existing empirical work within vocational education remains uneven. Studies examining leadership in vocational settings have often concentrated on managerial or administrative dimensions with fewer investigations explicitly examining Learning-Centered Leadership as a mechanism for improving teaching, professional learning and institutional effectiveness. Given the instructional complexity of TVET institutions, where leaders must balance academic standards with technical competencies and industry expectations, this gap underscores the need for a more theoretically grounded examination of Learning-Centered

Leadership in Vocational Colleges (UNESCO-UNEVOC, 2016). Although Learning-Centered Leadership provides strategic direction and instructional focus, leadership influence is frequently enacted through organizational structures that support collective professional learning.

Professional Learning Communities

Professional Learning Communities have been widely recognized as a key organizational structure for fostering continuous professional learning and instructional improvement. A large and growing body of literature suggests that schools characterized by strong collaborative cultures are better positioned to sustain improvement over time. Professional Learning Communities are commonly defined as collegial arrangements in which educators engage in ongoing collaboration, reflective inquiry and shared responsibility for improving teaching and student learning (Hord, 1997; Stoll et al., 2006). According to Hord (1997) framework, effective Professional Learning Communities are characterized by five core dimensions: (1) shared and supportive leadership, (2) shared values and vision, (3) collective learning and application, (4) shared personal practice and (5) supportive structural and relational conditions. These dimensions emphasize that PLCs operate through both cultural processes, such as trust and shared commitment and structural supports, including time, resources and leadership facilitation.

Empirical evidence consistently indicates that participation in Professional Learning Communities enhances teachers' pedagogical knowledge, reflective capacity and professional growth, thereby contributing to improved school outcomes (Agustin & Zumrotun, 2024; Liu et al., 2016b; Liu & Hallinger, 2024). At the policy level, Professional Learning Communities are formally positioned as a core strategy for strengthening collaborative learning and instructional quality (Ministry of Education, 2013). Nevertheless, despite this policy emphasis, PLC implementation remains uneven across educational institutions. Studies have reported substantial variation in collaboration, reflective dialogue and instructional coherence, particularly within vocational education contexts where organizational complexity and dual academic-technical teaching roles present additional challenges (Fazlina et al., 2023). Moreover, much of the existing empirical work on PLCs has focused on mainstream secondary schools, with relatively limited attention given to Vocational Colleges, despite their distinctive instructional demands (Chong et al., 2016; Ismail et al., 2014; Pun & Mansor, 2022). These limitations highlight the need for further investigation into how Professional Learning Communities function as an organizational mechanism for enhancing school effectiveness within vocational education systems.

Learning-Centered Leadership (LCL) and Professional Learning Communities (PLC)

Within this study, the relationship between Learning-Centered Leadership and Professional Learning Communities is theoretically grounded in Path–Goal Theory, which conceptualises leadership as a process through which leaders clarify goals, provide direction and remove barriers to enhance followers' motivation and performance (House, 1971). Applied to educational settings, learning-centred leadership practices guide teachers' engagement in collaborative professional activities by establishing enabling conditions for collective professional learning. Building on this theoretical premise, a growing body of empirical research suggests that Learning-Centered Leadership is closely linked to the development of

strong Professional Learning Communities. Leadership practices that emphasize a shared learning vision, instructional support and collaborative professional growth foster organizational conditions that support PLC functioning. Previous studies highlight that effective PLCs depend on shared and supportive leadership, adequate time and space for collaboration and high levels of professional trust (Hord & Sommers, 2008; Stoll et al., 2006; Vangrieken et al., 2017).

In this regard, Learning-Centered Leadership contributes directly to PLC development by fostering academic optimism, cultivating positive professional cultures and encouraging teachers to engage in collective reflection and continuous improvement (Kulophas & Hallinger, 2020). Empirical findings further suggest that learning-centred leadership practices strengthen collective learning through sustained collaborative engagement, which is essential for the long-term sustainability of PLC practices (Bodalina & Mestry, 2020; Thien et al., 2021). Despite this growing body of theoretically informed research, several gaps remain. Even when leaders actively promote collaborative environments, resistance may emerge among teachers who are reluctant to participate in shared leadership or sustained PLC activities, reflecting cultural and relational barriers to collaboration (Gülmez, 2022; Thien et al., 2022; Wong et al., 2020). Moreover, professional trust and relational dynamics continue to constrain the full operationalization of PLCs, as effective collaboration requires strong interpersonal foundations among teachers (Lee et al., 2022; Wong et al., 2020). Although existing studies confirm that Learning-Centered Leadership facilitates key PLC dimensions, including trust, collaboration and shared vision (Bellibaş et al., 2021; Ninković & Florić, 2024; Sun et al., 2023), empirical work examining these relationships within vocational education settings remains limited. In particular, relatively few studies have explored how structural complexity, dual teaching roles and skills-based curricula shape how Learning-Centered Leadership influences PLC practices in Vocational Colleges. Taken together, Path–Goal Theory provides a coherent explanation of how learning-centered leadership practices shape Professional Learning Communities by strengthening direction, support and enabling conditions for collaborative professional learning (House, 1971; Liu et al., 2016b).

Professional Learning Communities (PLC) and School Effectiveness

The contribution of Professional Learning Communities to School Effectiveness can be understood through Adult Learning Theory, which emphasizes that adults learn most effectively through relevant, collaborative and reflective learning experiences (Knowles, 1984). Professional Learning Communities provide structured opportunities for such learning by enabling teachers to engage in collective inquiry, shared practice and reflective dialogue focused on improving teaching and learning. Consistent with this perspective, empirical evidence demonstrates that participation in PLCs enhances pedagogical knowledge, strengthens instructional quality and contributes positively to overall school success (Agustin & Zumrotun, 2024; Liu et al., 2016b; Liu & Hallinger, 2017). At the system level, policy frameworks position PLCs as a core strategy for professional development, emphasizing collaborative learning and evidence-based decision-making as mechanisms for improving instructional practices (Ministry of Education, 2013).

The relationship between Professional Learning Communities and School Effectiveness can be further explained through Open Systems Theory, which conceptualises schools as dynamic

organizations in which institutional outcomes emerge from internal organizational processes that shape teaching and learning (Hoy & Miskel, 2012). Within this framework, Professional Learning Communities function as a critical internal organizational process, while School Effectiveness represents the system-level outcome. Effective PLC practices are therefore expected to strengthen instructional coherence, foster positive learning climates and support continuous improvement aligned with the Seven Correlates of Effective Schools (Lezotte & Snyder, 2011). Despite extensive research on PLCs, important gaps persist. Much of the empirical work linking Professional Learning Communities to School Effectiveness has focused on primary and secondary school contexts. At the same time, Vocational Colleges operate within distinct instructional environments characterized by competency-based curricula, industry alignment and dual academic and technical teaching roles. These contextual differences suggest that PLC processes may function differently in vocational institutions, yet empirical evidence in this area remains limited. Furthermore, variability in PLC implementation across vocational institutions, including inconsistent collaboration and reflective practices, underscores the need for systematic investigation to clarify how Professional Learning Communities contribute to School Effectiveness in Vocational Colleges (Fazlina et al., 2023). From an open systems theory perspective, Professional Learning Communities contribute to School Effectiveness by strengthening internal organizational processes that support effective instructional practices and institutional outcomes (Hoy & Miskel, 2012; Knowles, 1984; Lezotte & Snyder, 2011).

Learning-Centered Leadership (LCL) and School Effectiveness

The relationship between Learning-Centered Leadership and School Effectiveness is theoretically grounded in Path–Goal Theory, which conceptualizes leadership as a means of clarifying goals, providing direction and reducing barriers to enhance organizational performance (House, 1971). In educational settings, leadership practices that prioritise instructional quality, continuous professional development and supportive learning environments guide teachers' efforts towards shared institutional goals, thereby strengthening overall school effectiveness. Empirical research consistently indicates that leadership practices centred on learning are associated with improved institutional outcomes, including stronger instructional coherence, clearer organisational direction and more positive learning environments (Day et al., 2016; Hallinger, 2011; Murphy, 2007). International frameworks on effective schooling similarly identify strong instructional leadership as a defining characteristic of effective schools, alongside a clear mission, high expectations and a safe and orderly learning environment (Lezotte & Snyder, 2011). The leadership effectiveness relationship can also be interpreted through Open Systems Theory, which conceptualizes schools as dynamic organizations in which institutional outcomes emerge from the interaction between leadership inputs and internal organizational processes (Hoy & Miskel, 2012). Within this framework, Learning-Centered Leadership represents a critical organisational input that shapes instructional priorities, professional learning practices and organisational culture. At the same time, School Effectiveness reflects the system-level outcome articulated through the Seven Correlates of Effective Schools (Lezotte & Snyder, 2011).

Despite strong theoretical and empirical support for the leadership effectiveness relationship, important gaps remain. Existing leadership research has focused mainly on conventional schooling contexts. At the same time, Vocational Colleges operate within distinctive

pedagogical and organisational environments characterised by competency-based curricula, industry alignment and dual academic and technical teaching roles. Moreover, relatively limited empirical work has examined how Learning-Centered Leadership influences School Effectiveness within vocational education settings, particularly through indirect organisational processes rather than assuming direct leadership effects alone. This theoretical logic reinforces the expectation that Learning-Centered Leadership influences School Effectiveness by directing instructional priorities and strengthening organisational conditions that support effective schooling outcomes (House, 1971; Hoy & Miskel, 2012; Lezotte & Snyder, 2011).

PLC as a Mediator

In line with theoretical perspectives suggesting that leadership effects on organizational outcomes are primarily indirect, this section examines Professional Learning Communities as the mediating mechanism linking leadership practices to School Effectiveness. PLCs are posited to mediate this relationship by translating leadership direction into sustained, collaborative teacher action. Empirical evidence further suggests that PLCs enhance collective inquiry, reflective dialogue and collaborative decision-making, which are crucial for translating leadership expectations into meaningful pedagogical improvements (Zheng et al., 2018). Through these processes, PLCs function as the organizational conduit through which leadership influences teacher behavior, instructional coherence and professional practice. Empirical studies further demonstrate that leadership plays a decisive role in shaping core PLC components, including collaborative activities, a collective focus on student learning and reflective dialogue (Zhang et al., 2023). These dimensions, in turn, strengthen teachers' collective efficacy, which has been consistently linked to improved school effectiveness.

Within vocational education contexts, the mediating role of PLCs is particularly salient due to organizational complexity, dual academic-technical teaching responsibilities and the need for alignment with industry expectations. Research indicates that Vocational Colleges require strong collaborative norms to ensure instructional consistency and pedagogical alignment (Ministry of Education, 2013). However, PLC implementation across vocational institutions remains uneven, with variations in trust, collaboration and shared norms (Fazlina et al., 2023). International studies further reinforce the mediating importance of PLCs, demonstrating that PLCs significantly mediate relationships between leadership, teacher innovation, professional growth and school improvement (Kouhsari et al., 2023). Collectively, these findings position Professional Learning Communities as the principal mediating mechanism through which Learning-Centered Leadership influences organizational effectiveness in Vocational Colleges.

Conceptual Model and Propositions

Grounded in Path–Goal Theory, Adult Learning Theory and Open Systems Theory, this study advances a conceptual model that integrates Learning-Centered Leadership (LCL), Professional Learning Communities (PLC) and School Effectiveness within a coherent and theoretically informed framework. Learning-Centered Leadership, as articulated by Liu et al. (2016a), encompasses leadership practices that foreground teaching and learning through the articulation of a clear learning vision, the provision of instructional support, systematic program management and the modeling of learning-oriented professional behaviours. Anchored in Path–Goal Theory, these practices reflect leadership actions that clarify expectations, provide direction and remove obstacles that may impede effective

performance (House, 1971). Through these mechanisms, Learning-Centered Leadership is theorized to shape an organizational climate that motivates teachers, sustains professional engagement and aligns instructional practices with broader institutional goals.

Professional Learning Communities, grounded in Hord's (1997) framework are positioned in this study as the mediating construct through which leadership intentions are translated into collaborative professional practice. In line with Adult Learning Theory, teachers as adult learners, require learning environments characterized by autonomy, relevance and reflective dialogue to enhance their instructional knowledge and professional competence (Knowles, 1984). Professional Learning Communities provide these conditions by fostering a shared vision, collective inquiry, shared practice and supportive organizational structures that enable continuous professional learning and sustained instructional improvement.

School Effectiveness is conceptualised in this study through the Seven Correlates of Effective Schools proposed by Lezotte and Snyder (2011), which delineate key institutional characteristics, including strong instructional Leadership, high expectations for success, a clear and focused mission, opportunities to learn and time on task, frequent monitoring of student progress, a safe and orderly learning environment and positive home-school relationships. From an Open Systems Theory perspective, schools are viewed as dynamic organizations in which leadership inputs shape internal organizational processes that subsequently influence institutional outputs and outcomes (Hoy & Miskel, 2012). Within this framework, Learning-Centered Leadership functions as the primary organizational input, Professional Learning Communities operate as the core internal process and School Effectiveness represents the institutional outcome.

Informed by these complementary theoretical perspectives, the proposed conceptual model specifies a set of interrelated relationships among the study variables. Learning-Centered Leadership is expected to positively influence the development and functioning of Professional Learning Communities, which, in turn, contribute to enhanced School Effectiveness. In addition, Learning-Centered Leadership is posited to exert a direct influence on School Effectiveness. Accordingly, the model proposes that Professional Learning Communities mediate the relationship between Learning-Centered Leadership and School Effectiveness, consistent with the well-established view that leadership effects on school outcomes are predominantly indirect and are realized through collaborative professional processes (Hallinger, 2011). Figure 1 illustrates the proposed conceptual model, which integrates Learning-Centered Leadership (Liu et al., 2016a), Professional Learning Communities (Hord, 1997) and School Effectiveness (Lezotte & Snyder, 2011).

Conceptual Model Linking Learning-Centered Leadership, Professional Learning Communities and School Effectiveness

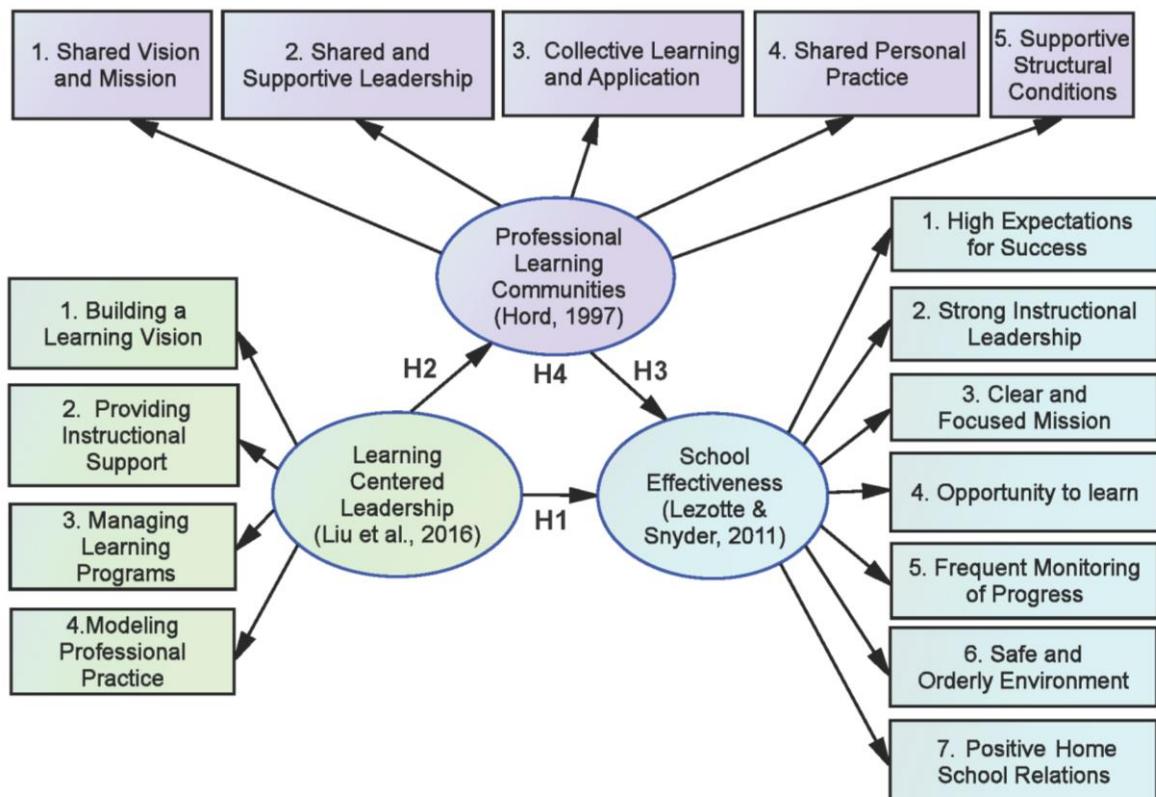


Figure 1

Note. The proposed model integrates Learning-Centered Leadership, Professional Learning Communities, and School Effectiveness within a unified theoretical framework. The model specifies hypothesised direct and indirect relationships, with Professional Learning Communities mediating the influence of leadership practices on school effectiveness in vocational education institutions.

The model specifies Learning-Centered Leadership as the exogenous construct, Professional Learning Communities as the mediating construct and School Effectiveness as the endogenous institutional outcome. Consistent with the underlying theoretical framework, the hypothesized relationships (H1–H4) represent the pathways through which leadership practices are expected to influence collaborative teacher learning processes and ultimately, overall school effectiveness in vocational education settings. Accordingly, the following hypotheses are proposed:

- H1:** Learning-Centered Leadership is positively associated with School Effectiveness.
- H2:** Learning-Centered Leadership is positively associated with Professional Learning Communities.
- H3:** Professional Learning Communities are positively associated with School Effectiveness.
- H4:** Professional Learning Communities mediate the relationship between Learning-Centered Leadership and School Effectiveness.

Discussion

Synthesizing these theoretical strands, the conceptual model positions Learning-Centered Leadership (LCL) as a key organizational input that shapes collaborative professional culture and institutional performance in vocational education settings. A substantial body of literature demonstrates that leadership practices centered on learning strengthen teacher professionalism, enhance instructional coherence and foster collaborative norms that support sustained school improvement (Hallinger, 2011; Hallinger et al., 2017). In this study, Learning-Centered Leadership is grounded in Path–Goal Theory, which conceptualises Leadership as a process through which leaders clarify goals, provide direction and remove obstacles to enhance follower motivation and performance (House, 1971). From this perspective, leadership behaviors such as articulating a clear learning vision, providing instructional support and modeling professional expectations function as mechanisms that guide teachers' efforts, align instructional practices with institutional goals and create enabling conditions for collaborative professional learning (Liu et al., 2016b).

Consistent with this leadership logic, Professional Learning Communities (PLCs) are conceptualized as the core organizational process through which leadership inputs are translated into changes in teacher practice. Accumulating evidence indicates that participation in PLCs enhances pedagogical knowledge, strengthens reflective practice and supports continuous professional learning, thereby contributing to instructional improvement and professional growth (Khan et al., 2021; Matei & Lincă, 2024). The mediating role of PLCs is theoretically underpinned by Adult Learning Theory, which emphasizes that adults learn most effectively through autonomous, relevant and collaborative learning experiences that involve reflective dialogue and shared decision-making (Knowles, 1984). PLCs provide these learning conditions through shared vision, collective inquiry, shared practice and supportive organizational structures.

School Effectiveness (SE) is conceptualized in this study as a system-level outcome, explicitly grounded in Open Systems Theory (Hoy & Miskel, 2012). From an Open Systems Theory perspective, vocational colleges are viewed as dynamic organizations in which institutional outcomes emerge through the interaction between leadership inputs and internal organizational processes. Within the proposed model, Learning-Centered Leadership functions as the primary organizational input, Professional Learning Communities operate as the core internal process and School Effectiveness represents the resulting institutional outcome. This outcome is reflected through key characteristics such as strong instructional Leadership, instructional coherence, a favorable learning climate and sustained organizational performance, as articulated in the Seven Correlates of Effective Schools (Lezotte & Snyder, 2011).

Accordingly, the proposed mediating model provides a coherent theoretical explanation of how Leadership influences institutional performance within the Malaysian TVET context. Learning-Centered Leadership is expected to shape the development and functioning of Professional Learning Communities by providing direction, structure and instructional support that guide teachers' professional practice. In turn, Professional Learning Communities are expected to strengthen School Effectiveness through collective learning, shared practice and enhanced instructional coherence. From a process-oriented perspective,

Professional Learning Communities serve as the behavioural pathway through which leadership effects are translated into institutional outcomes, rather than assuming direct leadership effects alone. This perspective aligns with contemporary leadership research that emphasizes the indirect nature of Leadership influence, operating through internal organizational processes. Building on existing empirical evidence, the proposed relationships are consistent with patterns reported in prior research and underscore the importance of examining leadership influences through collaborative professional learning mechanisms. Accordingly, the model highlights the need for further empirical investigation to validate the mediating role of Professional Learning Communities in linking Learning-Centered Leadership to School Effectiveness within vocational education institutions in Malaysia.

Conclusion

This conceptual paper advances understanding of leadership influences in vocational education by proposing an integrative model that links Learning-Centered Leadership (LCL), Professional Learning Communities (PLC) and School Effectiveness (SE) within Malaysian Vocational Colleges. The synthesis of prior literature demonstrates that leadership practices centered on learning play a critical role in shaping teachers' professional growth and organizational culture (Hallinger, 2011; Liu et al., 2016b). Within the proposed model, Professional Learning Communities are positioned as the key mediating mechanism through which leadership practices are translated into collective inquiry, shared practice and sustained instructional improvement, consistent with empirical evidence highlighting the importance of collaborative professional learning environments (Khan et al., 2021; Matei & Lincă, 2024). The model further aligns with institutional outcomes articulated in the Seven Correlates of Effective Schools, underscoring the importance of strong leadership, a clear mission, effective instructional practices and a supportive school climate (Lezotte & Snyder, 2011).

From a theoretical perspective, this study contributes to leadership scholarship by integrating leadership theory, adult learning theory and an open systems theory perspective to explain how leadership effects on school effectiveness operate through collaborative professional processes rather than direct pathways alone. From a practical perspective, the model offers guidance for vocational college leaders by emphasizing the strategic importance of fostering well-structured Professional Learning Communities as a means of enhancing instructional coherence, teacher capacity and institutional performance. From a policy perspective, the proposed framework supports ongoing national efforts to enhance professional learning and school effectiveness as articulated in the Malaysia Education Blueprint 2013–2025, the National TVET Policy 2030 and related initiatives aimed at strengthening leadership quality, collaborative professional development and instructional excellence within vocational education institutions (Government of Malaysia, 2024; Ministry of Education, 2013).

Collectively, the proposed model offers a theoretically grounded foundation for future empirical research to validate the mediating role of Professional Learning Communities and to examine the extent to which Learning-Centered Leadership practices can enhance institutional performance in vocational education settings. Overall, this framework contributes to the broader leadership literature while providing practical and policy-relevant insights for improving instructional quality and organizational capacity across Malaysian Vocational Colleges.

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