In-House Trainer Development (Cascade Method) vs. External Training: A Strategic Assessment

Reframing Cascade, External, and Hybrid Training Models

Abstract

Purpose – The purpose of this paper is to reconceptualize organizational training systems as learning architectures that shape how learning is generated, transferred and institutionalized within learning organizations. Rather than treating training as an operational or delivery-oriented activity, the paper positions training architecture as a strategic learning capability that influences long-term organizational adaptability.

Design/methodology/approach – The purpose of this paper is to reconceptualize organizational training systems as learning architectures that shape how learning is generated, transferred and institutionalized within learning organizations. Rather than treating training as an operational or delivery-oriented activity, the paper positions training architecture as a strategic learning capability that influences long-term organizational adaptability.

Findings – The analysis demonstrates that cascade and external training architectures support different learning dynamics. Cascade systems strengthen contextualization, social learning and institutionalization but risk knowledge dilution, while external training enhances exploratory

learning and knowledge novelty but often lacks mechanisms for sustained integration. To address these limitations, the paper develops a hybrid training architecture that combines external knowledge infusion with internally embedded learning routines, thereby supporting both innovation and learning continuity.

Research limitations/implications – As a conceptual paper, this study does not offer empirical testing of the proposed framework. Instead, it provides a theoretical foundation for future empirical research examining how different training architectures influence organizational learning processes across contexts, industries and organizational forms.

Practical implications – For learning leaders and organizational decision-makers, the paper offers a conceptually grounded framework for selecting and combining training architectures in line with learning objectives, environmental volatility and internal learning capacity. It encourages a shift from cost-driven training decisions to learning-oriented architectural design.

Originality/value – This paper contributes to learning organization scholarship by explicitly framing training architecture as a core learning capability. It advances theory by linking training system design to organizational learning routines, capability renewal and long-term adaptability, an area that has received limited conceptual attention in prior research.

Keywords learning organization; organizational learning; training architecture; dynamic capabilities; knowledge institutionalization

Introduction

This paper offers a conceptual examination of training architecture as a critical yet underexplored mechanism through which learning organizations design, diffuse and institutionalize learning. Specifically, it scrutinises the strategic implications of two dominant training architectures internal cascade (train-the-trainer) systems and external expert-led training and explores how these configurations shape organizational learning processes over time. By adopting a learning organization lens, the paper shifts attention from operational training choices to the broader learning conditions that training architectures create within organizations.

Learning organizations are commonly understood as entities capable of continuously generating, integrating and renewing knowledge in response to changing environmental demands (Senge, 1990; Argyris and Schön, 1996; Crossan et al., 1999). Central to this capability is not merely the presence of learning activities, but the existence of structures and routines that support collective learning and knowledge institutionalization. Despite this emphasis, training is frequently treated in both research and practice as a functional or technical intervention, often evaluated through short-term

effectiveness, efficiency or cost metrics. Such an approach risks overlooking the deeper role that training systems play in shaping learning routines and sustaining organizational learning capacity.

Organizations typically rely on two broad training approaches. Internal cascade training systems emphasise scalability and contextualisation by diffusing knowledge through internal actors who are embedded within organizational practices. External training, by contrast, prioritises access to specialised expertise and novel knowledge sourced from outside the organization. While both approaches are widely adopted, they present distinct challenges for learning organizations. Cascade systems may facilitate social learning and internal alignment, yet they are vulnerable to knowledge dilution and uneven learning quality. External training can stimulate exploratory learning and innovation, but often struggles to achieve lasting integration into organizational routines. These tensions become particularly salient in dynamic and uncertain environments, where organizations must balance knowledge renewal with learning continuity.

From a learning organization perspective, these challenges suggest that training architecture should be understood as a learning infrastructure that conditions how knowledge flows, how learning is reinforced, and how capabilities are renewed. The design of training systems therefore has implications for absorptive capacity, the

balance between exploration and exploitation, and the durability of learning outcomes. However, existing literature has paid limited attention to training architecture as a conceptual construct within learning organization scholarship, leaving a gap in understanding how different configurations support or constrain collective learning.

This paper addresses this gap by conceptualising training architecture as a strategic learning capability. Drawing on organizational learning theory and dynamic capability perspectives, it analytically compares internal cascade and external training architectures and examines their implications for learning processes such as knowledge integration, institutionalization and capability renewal. Building on this analysis, the paper develops a hybrid training architecture that integrates external knowledge infusion with internally embedded learning routines, offering a conceptual pathway for sustaining organizational learning without sacrificing innovation.

Although prior research has acknowledged the importance of training for organizational performance and development, the intersection between training architecture and learning organization theory remains insufficiently explored. Accordingly, this conceptual paper seeks to contribute to *The Learning Organization* literature by addressing the following guiding question: how do different training architectures shape organizational learning processes, and how can

learning organizations design training systems that support sustained learning and adaptability over time?

RQ: How do different training architectures shape organizational learning processes and support sustained learning within learning organizations?

Literature review

The role of organizational learning in sustaining adaptability and long-term performance is well established in learning organization scholarship. Foundational contributions emphasize that learning organizations are distinguished not by episodic learning activities, but by their capacity to systematically generate, integrate and institutionalize knowledge across organizational levels (Argyris and Schön, 1996; Senge, 1990; Crossan et al., 1999). Within this body of work, learning is understood as a collective process shaped by organizational structures, routines and social interactions rather than as an aggregation of individual learning outcomes.

Training has traditionally been positioned as a key mechanism through which organizations seek to support learning and capability development. Prior research has examined training primarily in terms of effectiveness, transfer of learning, return on investment and alignment with performance objectives (Salas et al., 2012; Burke and

Hutchins, 2007). While these studies offer valuable insights, they tend to conceptualize training as a discrete intervention rather than as an integral component of broader organizational learning systems. As a result, limited attention has been paid to how the design and configuration of training systems influence collective learning processes over time.

Two dominant training approaches are frequently discussed in the literature: internal cascade (train-the-trainer) systems and external expert-led training. Cascade training has been widely adopted in large and geographically dispersed organizations due to its scalability and cost efficiency (Jacobs and Jones, 1995; Rummler and Brache, 2013). Studies suggest that internal trainers possess contextual knowledge that enables them to adapt content to local practices, thereby facilitating knowledge integration and social learning (Nonaka and Takeuchi, 1995). However, cascade systems are also associated with challenges such as message dilution, inconsistent delivery quality and dependence on the pedagogical capabilities of internal trainers (Broad and Newstrom, 1992). These limitations raise questions about the extent to which cascade training supports sustained organizational learning rather than short-term dissemination.

External training, by contrast, has been examined as a means of introducing specialized expertise, new perspectives and innovative

practices into organizations (Garavan et al., 2016). External experts can enhance exploratory learning by exposing organizations to emerging knowledge and practices beyond existing routines (March, 1991). Nevertheless, research has repeatedly highlighted difficulties related to the transfer and institutionalization of externally acquired knowledge. Without internal reinforcement mechanisms, learning from external training often remains detached from everyday practice, limiting its long-term impact (Baldwin and Ford, 1988; Holton et al., 2000). This challenge is particularly salient in organizations that lack established learning routines or absorptive capacity.

From a learning organization perspective, these findings suggest that training approaches cannot be evaluated solely on operational criteria such as cost or reach. Instead, training systems should be examined as learning architectures that shape how knowledge enters the organization, how it circulates among members, and how it becomes embedded in routines and norms. Organizational learning theory highlights that learning is sustained only when knowledge is institutionalized through shared understanding, repeated practice and supportive structures (Crossan et al., 1999; Dixon, 1998). Training architectures that fail to support these processes may contribute to fragmented or transient learning outcomes.

Dynamic capability theory further underscores the importance of training architecture for organizational adaptability. Dynamic capabilities involve the capacity to sense environmental changes, seize learning opportunities and transform existing routines accordingly (Teece et al., 1997). Training systems play a critical role in operationalizing these processes by determining how new knowledge is accessed and how learning is translated into action. However, existing research has rarely integrated dynamic capability perspectives with analyses of training system design, leaving a gap in understanding how different training architectures contribute to capability renewal.

Recent studies have begun to acknowledge the need for more integrative approaches to organizational learning. Scholars have argued that organizations must balance exploratory learning associated with innovation and novelty with exploitative learning that reinforces existing competencies (March, 1991). Yet, how training architectures can be designed to support this balance remains underexplored. Research has largely treated internal and external training as mutually exclusive choices, rather than as complementary components of a coherent learning system.

Collectively, the literature highlights the importance of training for organizational learning while revealing a lack of conceptual clarity regarding how training systems function as learning architectures.

Although prior studies have examined cascade and external training independently, limited research has theorized their implications for collective learning, knowledge institutionalization and long-term adaptability within learning organizations. This gap suggests the need for a conceptual framework that integrates training architecture into learning organization theory.

Accordingly, this paper builds on existing scholarship by reconceptualizing training architecture as a strategic learning capability. By analytically comparing internal cascade and external training systems and developing a hybrid architecture, the study seeks to extend learning organization literature and contribute to a deeper understanding of how organizations can deliberately design training systems that support sustained learning and capability renewal.

Analytical concepts

Training architecture

While training is often treated as a technical or administrative function, such a decontextualized view risks obscuring its deeper role in shaping organizational learning. When training is conceptualized as a delivery mechanism independent of organizational context, the relationship between training systems and

collective learning processes may be undervalued (Salas et al., 2012; Burke and Hutchins, 2007). This paper advances the position that training architecture and learning are inherently intertwined and are profoundly shaped by the structural, relational and cultural characteristics of the organization in which they are embedded.

Learning organization scholarship emphasizes that learning does not occur in isolation but emerges through social interaction, shared meaning and institutionalized routines (Argyris and Schön, 1996; Senge, 1990; Crossan et al., 1999). From this perspective, training architecture cannot be understood solely in terms of content or pedagogy. Rather, it represents a system of actors, practices and processes through which knowledge is introduced, interpreted and stabilized within organizational contexts. Different training architectures therefore create distinct learning conditions that influence how knowledge is absorbed, circulated and embedded.

Organizations adopt training architectures within specific structural and relational contexts that condition learning outcomes. Internal cascade training systems, for example, rely on embedded social relations and shared practices to diffuse knowledge, whereas external training architectures introduce knowledge from outside organizational boundaries. These architectures are not neutral; they reflect underlying assumptions about expertise, authority and learning responsibility. As such, the effectiveness of training

architectures cannot be separated from the organizational contexts and team dynamics through which they operate.

In line with a practice-oriented perspective, this paper departs from views that treat training effectiveness as an outcome of individual competence or instructional design alone. Instead, it adopts an analytical lens that foregrounds training as a collective learning practice enacted through everyday organizational interactions. This approach aligns with scholarship that conceptualizes learning as a socially situated process emerging through participation, dialogue and shared experience (Lave and Wenger, 1991; Raelin, 2008). Training architecture, from this viewpoint, shapes the arenas in which learning-in-practice unfolds.

By focusing on training architecture as an analytical concept, the paper shifts attention from isolated training events to the relational and structural conditions that enable or constrain collective learning. This perspective highlights how training systems contribute to the formation of learning routines, the reinforcement of shared understanding and the institutionalization of knowledge. It further underscores that learning organizations do not simply adopt training programs; they design learning architectures that structure how learning is enacted and sustained over time.

Analytical concepts

Collective learning

From a learning organization perspective, learning is fundamentally a collective and socially situated process rather than an individual cognitive outcome. Learning emerges through participation in shared practices, dialogue and interaction within organizational contexts, often conceptualized as communities of practice (Lave and Wenger, 1991; Wenger, 1998; Smith et al., 2019). These communities consist of organizational members who engage around common tasks, challenges or goals and who learn with and from one another through sustained interaction.

Within learning organizations, collective learning unfolds through ongoing communicative processes that allow knowledge to be negotiated, interpreted and embedded in shared understanding. Prior research suggests that such learning does not occur automatically but depends on the availability of social spaces in which organizational members can engage in dialogue, reflection and joint problem-solving (Edmondson, 1999; Dixon, 1998; Ohlsson, 2013). Training systems play a critical role in shaping these spaces by structuring who participates in learning, how interaction is organized and how learning is reinforced over time.

Collective learning is therefore conceptualized in this paper as a set of interactive and communicative processes through which

organizational members exchange experiences, challenge assumptions and co-construct meaning. These processes contribute to the development of shared mental models and a collective capacity for action within teams and across organizational levels (Döös and Wilhelmson, 2011; Crossan et al., 1999). Continuous dialogue and interaction are thus central mechanisms through which collective learning is sustained.

Participation is a core condition for collective learning. Members must have opportunities to engage meaningfully in organizational activities and to influence how work practices are enacted and modified. Through participation, individuals assimilate information into collective knowledge structures, thereby enhancing the effectiveness and coherence of collective action (Dixon, 1999; Wiese and Burke, 2019). Organizational practices are continuously produced and reproduced through such participation, highlighting the dynamic and emergent nature of collective learning (Gherardi, 2009; Wenger, 1998).

Importantly, collective learning is not limited to formal learning settings. It unfolds in everyday work practices, informal interactions and shared problem-solving situations. Training architectures can either support or constrain these processes by enabling or limiting opportunities for participation, interaction and reflection. Understanding collective learning therefore requires attention to the

organizational arrangements that structure learning encounters and influence how learning becomes institutionalized over time.

Methods

Data collection

This study adopts a conceptual research design to examine training architecture as a learning capability within learning organizations. Conceptual research is particularly suited to exploring under-theorized phenomena and to advancing theoretical understanding through analytical reasoning rather than empirical measurement. In line with established methodological guidance, the paper synthesizes and integrates insights from learning organization theory, organizational learning literature and dynamic capability perspectives to develop a coherent conceptual framework.

Rather than drawing on primary empirical data, the analysis is grounded in a systematic engagement with prior theoretical and empirical scholarship. The conceptual development proceeds through an analytical comparison of two dominant training architectures widely discussed in organizational practice and literature: internal cascade (train-the-trainer) systems and external expert-led training. These architectures are treated as ideal-typical learning

configurations that illuminate contrasting assumptions about knowledge flow, learning responsibility and institutionalization.

The analytical process unfolds in three stages. First, the paper reviews and synthesizes key contributions from learning organization scholarship to establish the theoretical foundations for understanding learning as a collective and institutionalized process. Second, it examines cascade and external training architectures through this theoretical lens, identifying how each configuration enables and constrains learning processes such as exploration, exploitation, knowledge integration and capability renewal. Third, building on this comparative analysis, the study develops a hybrid training architecture that integrates external knowledge infusion with internally embedded learning routines.

The conceptual framework proposed in this paper is intended as an analytical heuristic rather than a prescriptive model. Its purpose is to support theory development by clarifying relationships between training architecture and organizational learning processes, and to offer a foundation for future empirical research. By explicitly situating training architecture within learning organization theory, the study contributes to a deeper understanding of how organizations can design learning systems that support sustained adaptability over time.

Conceptual analysis

Given the complexity of organizational learning processes and the multifaceted nature of training architecture, a systematic analytical approach was required to develop a coherent conceptual framework. Accordingly, this paper adopts an abductive analytical strategy, which is particularly suited to theory development as it enables iterative movement between existing theory and emerging conceptual insights (Tavory and Timmermans, 2014; Saetre and Van de Ven, 2021). Rather than testing predefined hypotheses, the analysis seeks to refine and extend theory by identifying patterns, tensions and relationships across bodies of literature.

The abductive analysis was conducted through a multi-stage conceptual development process. First, key constructs from learning organization theory, organizational learning literature and dynamic capability research were identified and synthesised. This initial stage involved close reading of seminal and contemporary studies to distil central concepts related to learning routines, knowledge integration, exploration and institutionalization. These concepts served as sensitising devices that guided subsequent analysis.

Second, the paper engaged in a comparative conceptual examination of internal cascade training and external expert-led training as ideal-typical learning architectures. Drawing on prior research and

theoretical arguments, each training architecture was analysed in terms of its underlying assumptions about knowledge flow, learning responsibility and participation. This stage enabled the identification of recurring conceptual patterns and tensions, particularly regarding the balance between contextualisation and knowledge novelty, as well as between learning continuity and innovation.

Third, the analysis focused on integrating insights from the comparative examination to develop a higher-order conceptual understanding. Through iterative refinement, training architecture was theorised as a learning capability that connects learning processes to organizational routines and capability renewal. This integrative step led to the articulation of a hybrid training architecture that synthesises elements of cascade and external training, highlighting how organizations can combine learning architectures to support sustained organizational learning.

Throughout this analytical process, theoretical coherence and internal consistency were prioritised. The resulting conceptual framework is intended as an analytical heuristic rather than a prescriptive model. Its purpose is to clarify relationships between training architecture and collective learning processes and to provide a foundation for future empirical investigation. By explicitly articulating the analytical logic underpinning the framework, the

paper seeks to enhance transparency and rigour in conceptual development.

Contextual background

Organizations increasingly operate in environments characterised by complexity, knowledge intensity and continuous change. In such contexts, the ability to sustain collective learning and renew capabilities over time has become critical for organizational effectiveness. Learning organization scholarship emphasises that learning outcomes are shaped not only by individual competence but by the organizational arrangements through which knowledge is created, shared and institutionalised (Senge, 1990; Argyris and Schön, 1996).

Training systems constitute a central element of this learning context. The way training is organised, delivered and embedded reflects underlying assumptions about learning responsibility and knowledge flow within organizations. As organizations evolve, they often rely on different training architectures to balance the need for contextualised learning with access to external expertise.

This paper situates its conceptual analysis within this broader organizational context, examining training architecture as a learning

capability that influences collective learning processes across organizations seeking to sustain adaptability and learning over time.

Conceptual insights from training architectures and collective learning

Drawing on a comparative analysis of alternative training architectures, this paper develops a set of conceptual insights into how training systems shape collective learning within learning organizations. Rather than reporting empirical findings, the analysis explicates theoretical patterns that emerge from examining internally embedded cascade training and externally sourced training as distinct but complementary learning architectures. These patterns illuminate how different training configurations influence learning continuity, knowledge integration and organizational adaptability.

The first insight concerns the role of internally embedded training architectures in supporting learning continuity. Cascade training systems are grounded in everyday organizational practice and rely on peer-based knowledge transmission, repeated interaction and shared experience. Because learning occurs within existing social and task-related contexts, such architectures promote contextualised understanding and reinforce common frames of reference among organizational members. Over time, these processes strengthen shared meaning, stabilise learning routines and facilitate the

institutionalisation of knowledge, thereby supporting sustained collective learning within the organization.

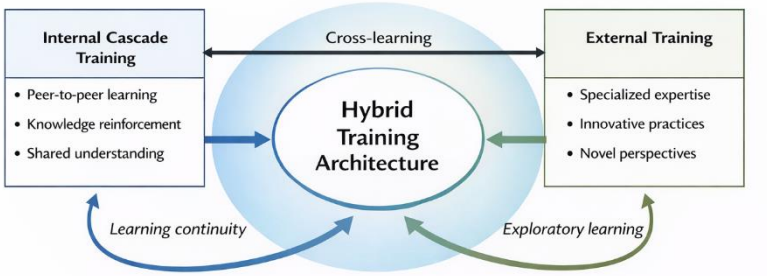
Cascade training also enables learning to be distributed rather than concentrated. By embedding training responsibilities across organizational roles, knowledge is continuously circulated and refined through interaction. This distribution enhances resilience by reducing dependency on individual knowledge holders and by ensuring that learning remains embedded in collective practice rather than confined to formal training events. As a result, internally embedded training architectures function not only as skill-development mechanisms but as infrastructures that sustain collective learning over time.

The second insight highlights the contribution of external training architectures to exploratory learning. External training introduces specialised expertise, novel perspectives and practices that may not be readily available within the organization. Such inputs can stimulate innovation, challenge taken-for-granted assumptions and broaden the organization's learning horizon. From a learning organization perspective, external training plays an important role in enabling exploration and preventing learning systems from becoming overly insular or path dependent.

However, the analysis also reveals the limitations of external training when it operates in isolation. Without complementary internal learning mechanisms, externally acquired knowledge risks remaining detached from everyday organizational practice. When learning is not translated, discussed and recontextualised through internal interaction routines, its contribution to collective learning may be short-lived or confined to individual participants. In such cases, training functions as episodic knowledge acquisition rather than as a driver of sustained organizational learning.

Taken together, these insights suggest that no single training architecture is sufficient to support both learning continuity and adaptability. Internally embedded training systems excel at reinforcing shared understanding and sustaining collective learning, while external training architectures are better suited to stimulating exploration and renewal. Effective learning organizations therefore require training architectures that balance internal integration with external knowledge infusion. This conceptual observation provides the foundation for the hybrid training architecture developed in the subsequent section, which integrates the strengths of both approaches to support sustained collective learning and organizational adaptability.

Figure 2. Hybrid training architecture: Balancing internal continuity and external exploration



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Trust-based leadership as a foundational condition for collective learning

Prior research consistently highlights trust as a central condition for collective learning within learning organizations. Trust shapes whether organizational members experience psychological safety to share ideas, question assumptions and engage in open dialogue, all of which are essential for learning processes to extend beyond individual cognition and become collectively embedded (Edmondson, 1999; Senge, 1994). From a learning organization perspective, trust is not merely an interpersonal attribute but an

emergent and dynamic property shaped through leadership practices, organizational routines and relational interactions over time.

Trust-based leadership fosters collective learning by signalling confidence in employees' competence and by legitimising broad participation in sense-making and decision-making processes. When leadership practices are grounded in openness, transparency and inclusion, organizational members are more likely to contribute their knowledge and experiences to collective discussions. In contrast, leadership approaches characterised by excessive control, monitoring or disproportionate reliance on external authority can unintentionally erode trust and discourage knowledge sharing, thereby constraining collective learning processes.

Within learning organizations, trust is particularly critical for enabling experimentation and learning from failure. Collective learning depends on members' willingness to surface uncertainties, test new ideas and reflect on outcomes without fear of blame or negative repercussions. Trust-based leadership supports such conditions by framing mistakes as learning opportunities rather than as indicators of individual inadequacy. This orientation encourages reflective dialogue and collective problem-solving, reinforcing learning routines that sustain organizational adaptability over time.

Trust also mediates how knowledge from different sources is valued, integrated and mobilised within the organization. Leadership practices that privilege external expertise at the expense of internally embedded experiential knowledge risk marginalising employees' insights and weakening learning continuity. Trust-based leadership, by contrast, recognises the legitimacy of both external and internal knowledge sources, enabling organizations to balance exploration with the retention and refinement of existing capabilities.

Taken together, these insights suggest that trust-based leadership constitutes a foundational condition for collective learning within learning organizations. By shaping participation, dialogue and psychological safety, leadership practices directly influence whether training architectures and learning systems translate into sustained collective learning. In this sense, trust-based leadership operates not as a complementary factor but as an enabling infrastructure upon which collective learning processes are built and maintained.

Collective learning under conditions of disruption

Periods of crisis and disruption place exceptional strain on organizational learning systems. When established routines are interrupted and operational certainty is reduced, organizations face heightened challenges related to coordination, sense-making and the maintenance of collective capabilities. Learning organization

research suggests that such conditions can either undermine collective learning or, conversely, serve as catalysts for learning renewal, depending on how learning processes are structured, enacted and supported through leadership practices (Weick, 1995; Edmondson, 1999).

Disruptive contexts often expose the limitations of training systems that rely heavily on predefined activities, linear learning pathways or rigid role allocations. When normal operations are suspended or significantly altered, organizational members may experience uncertainty regarding their contributions and responsibilities, which can weaken engagement and disrupt learning continuity. Under such conditions, leadership practices and learning architectures become critical in sustaining collective learning by reaffirming shared purpose, legitimising experimentation and enabling participation beyond formal role boundaries.

Collective learning during disruption is strengthened when organizations deliberately expand participation in sense-making and decision-making processes. Providing organizational members with opportunities to contribute ideas, reflect on past experiences and jointly explore future directions enables learning to shift from individual cognition toward collective understanding. Such practices support the transformation of uncertainty into a shared learning

challenge rather than an individual burden, fostering a sense of joint responsibility for organizational adaptation.

Reconfiguring interaction structures also plays a central role in facilitating collective learning under disruptive conditions. When organizations adopt new modes of communication and interaction particularly in contexts characterised by physical separation, hybrid arrangements or remote work structured opportunities for dialogue become essential. Regular forums dedicated to strategic reflection, experience sharing and emotional sense-making help sustain learning processes by legitimising reflection and knowledge exchange as integral components of organizational work rather than as secondary or informal activities.

Collective learning is further reinforced when knowledge is deliberately distributed rather than concentrated in specific roles or individuals. Learning organizations benefit from training architectures and interaction routines that promote cross-learning, knowledge redundancy and mutual substitution. Such arrangements reduce vulnerability associated with knowledge silos and enhance organizational resilience by ensuring that learning remains shared, transferable and continuously updated through interaction.

Taken together, these insights suggest that collective learning under disruptive conditions depends on the deliberate design of leadership

practices and learning architectures that prioritise participation, dialogue and shared responsibility for learning. Rather than relying solely on pre-existing training systems, learning organizations that actively adapt their learning arrangements in response to disruption are better positioned to transform periods of uncertainty into opportunities for collective learning and capability renewal.

Discussion

This conceptual analysis highlights the central role of organizational arrangements such as routines, structures, communication modes and interaction patterns in enabling collective learning within learning organizations. Rather than viewing learning as a spontaneous outcome of individual effort, the discussion reinforces the idea that collective learning is actively shaped by how organizations design and sustain conditions for participation, dialogue and knowledge exchange. These conditions are particularly salient in periods of disruption, when established routines are challenged and uncertainty is heightened.

The findings of this study underscore trust as a foundational condition for collective learning. Trust influences whether organizational members feel safe to share experiences, question assumptions and engage in open dialogue. When trust is supported through consistent leadership practices and inclusive interaction

structures, learning is more likely to become embedded in everyday organizational activities. Conversely, when trust is undermined, learning processes may fragment, limiting the organization's capacity to adapt. This observation aligns with learning organization theory, which emphasises psychological safety, shared understanding and relational dynamics as prerequisites for sustained learning.

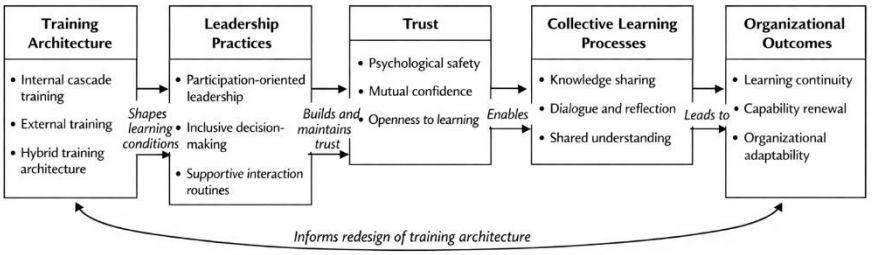
The discussion further suggests that leadership practices play a critical role in shaping these learning conditions. Leadership that recognises organizational members as carriers of valuable knowledge and experience reframes individuals as social capital rather than as passive recipients of instruction. Such a perspective enables the formation of communities of practice in which learning is distributed, socially situated and continuously reinforced through interaction. In this sense, leadership and learning become mutually constitutive processes rather than separate organizational functions.

Importantly, the analysis also highlights the vulnerability of organizations particularly smaller or resource-constrained ones to disruptions that challenge learning continuity. In such contexts, the capacity for collective learning becomes a critical adaptive mechanism. Organizations that deliberately design learning architectures and interaction routines to support participation and shared sense-making are better positioned to respond to internal change and external uncertainty. Collective learning thus functions

not only as a developmental process but as a strategic capability that supports organizational resilience.

Taken together, these insights suggest that collective learning is sustained not through isolated training interventions but through the deliberate alignment of leadership practices, learning architectures and interaction structures. By fostering trust-based environments and embedding learning into organizational routines, learning organizations can enhance their capacity to adapt, innovate and navigate periods of disruption. This discussion provides a conceptual foundation for understanding how learning-oriented leadership and training architecture jointly contribute to long-term organizational learning and adaptability.

Figure 1. Conceptual model of training architecture, trust and collective learning



By enabling organizational members to contribute their knowledge and experience toward shared goals, learning-oriented leadership challenges traditional command-and-control models of management. Such an approach reframes authority as distributed and relational rather than hierarchical, allowing learning to emerge through interaction rather than directive control. In learning organizations, this shift creates social conditions in which collective sense-making and shared direction become possible, strengthening engagement and commitment across teams.

Consistent with relational perspectives, trust is conceptualised in this paper as an interaction-based phenomenon that develops over time through repeated communication and shared practice. Trust does not arise from formal roles alone but is cultivated through everyday interactions that signal respect, openness and confidence in others' competence. From this standpoint, trust functions as a foundational mechanism through which collective learning becomes viable. When trust is embedded in organizational routines and leadership practices, it provides the psychological safety necessary for dialogue, experimentation and reflection.

Trust-based relationships enhance cooperation and knowledge sharing, particularly when organizational members are actively involved in decision-making processes. Meaningful participation reinforces individuals' identification with the organization and

legitimises their experiential knowledge as a valuable learning resource. In contexts where knowledge is unevenly distributed, such participation becomes especially important, as it enables the integration of diverse perspectives and supports innovation through collective sense-making.

Periods of disruption place additional pressure on trust relations within organizations. Research indicates that under conditions of uncertainty, many organizations revert to control-oriented leadership practices in an attempt to stabilise performance. While such approaches may offer short-term coordination, they often undermine trust and restrict learning by limiting interaction and participation. The conceptual insights developed in this paper suggest that trust must not only pre-exist but also be actively maintained through leadership practices that prioritise communication, inclusion and shared responsibility for learning.

Furthermore, the analysis highlights that collective learning is contingent upon the extent to which organizational members are enabled to participate across multiple practices. When participation is broadened beyond formal roles, individuals are more likely to exchange experiences, assume temporary leadership roles and contribute to reflective dialogue. Such practices strengthen mutual understanding and align learning efforts with organizational objectives. Leadership practices that intentionally create forums for

interaction and reflection thus play a critical role in sustaining collective learning.

Taken together, these insights reinforce the argument that the conditions and processes of collective learning are shaped by leadership in practice and by the design of learning architectures that facilitate participation, dialogue and trust. By embedding interaction routines and communication modes that support knowledge sharing and experience exchange, learning organizations can enhance their capacity to reassess assumptions, adapt practices and respond effectively to ongoing and future challenges.

Discussion

This paper develops a conceptual account of how leadership practices and training architectures jointly shape collective learning within learning organizations. The analysis highlights that collective learning does not arise automatically from training activities but is contingent on the relational conditions created through leadership in practice, particularly trust, participation and communication. In this sense, training architectures function as enabling structures whose effectiveness depends on how they are enacted and supported within everyday organizational practices.

A central contribution of this study lies in conceptualising leadership as a relational and collective process rather than an individual attribute. Leadership in practice influences whether organizational members experience psychological safety and perceive their knowledge as valued, which in turn affects their willingness to engage in dialogue, experimentation and shared sense-making. Trust-based leadership practices are therefore not merely supportive but foundational, as they shape the conditions under which learning routines, interaction structures and training systems can operate effectively.

The discussion also advances learning organization scholarship by integrating leadership, trust and training architecture into a single conceptual framework. Training architectures are positioned as organizational learning capabilities that govern how knowledge is introduced, circulated and institutionalised. Internally embedded architectures support learning continuity through repeated interaction and shared understanding, while externally oriented architectures contribute to exploration by introducing new perspectives. However, without trust-based leadership and participatory practices, both forms risk remaining disconnected from collective learning processes.

From a practical perspective, the discussion suggests that learning organizations operating under conditions of disruption and uncertainty must pay close attention to how leadership practices

shape learning environments. Designing training architectures alone is insufficient; leaders must also cultivate interaction routines and communicative spaces that legitimise participation and shared responsibility for learning. By embedding trust and dialogue into leadership practice, organizations can enhance their capacity for collective learning and strengthen resilience in the face of change.

Conclusion

This paper offers a conceptual contribution to learning organization research by clarifying how leadership practices and training architectures interact to enable collective learning. It argues that collective learning is a socially situated process grounded in trust-based leadership, participation and open communication rather than a direct outcome of training initiatives.

By framing leadership as a relational practice and training architecture as a learning capability, the study highlights the importance of aligning organizational structures with leadership practices that support shared sense-making and knowledge exchange. Future research is encouraged to empirically examine the proposed framework across organizational contexts and to explore how leadership practices and training architectures evolve over time in response to disruption and change.

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