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Learning Technologies and Leadership in Learning Organizations: A Systematic Literature Review

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Abstract

This paper examines how leadership, organizational learning, and technology integration interact to foster innovation and adaptability within learning organizations in the context of digital transformation. While prior studies have largely examined these elements in isolation, there remains limited synthesis of how leadership, learning processes, and digital technologies jointly operate across organizational contexts. This review is novel in that it systematically integrates leadership styles, organizational learning processes, and digital transformation within a single analytical framework and classifies existing empirical studies according to direct, moderation, and mediation models. Using a systematic literature review guided by PRISMA, the study synthesises 23 peer-reviewed empirical articles published between 2015 and 2025 across education, healthcare, public, and private sector organizations. The findings show that leadership influences organizational learning and performance through both direct and indirect pathways, with effects shaped by contextual conditions such as organizational flexibility and sectoral characteristics. Mediation mechanisms, particularly employee productivity and knowledge sharing, are central in translating leadership practices and technology adoption into improved organizational outcomes. Moderation effects further indicate that leadership effectiveness varies according to organizational readiness and environmental complexity. The review highlights that context-sensitive leadership and strategically aligned digital learning initiatives are critical for sustainable organizational development. It concludes by recommending that future research and policy prioritize integrated and adaptive approaches to leadership development and digital learning, offering a coherent roadmap for scholars and practitioners seeking to build resilient and innovative learning organizations.

KEYWORDS

organizational learning; leadership; digital transformation; slr.

Introduction

The concept of learning organization has emerged as a strategic imperative in the 21st century knowledge economy, where adaptability, innovation, and continuous development are vital for organizational survival and success. As originally conceptualized by Senge, a learning organization is one that facilitates the learning of all its members and continuously transforms itself. In the era of rapid technological evolution and societal transformation, leadership plays a critical role in enabling this continuous learning by fostering cultures that support inquiry, experimentation, and collective problem solving (Baráth, 2015; Hael et al., 2024).

Contemporary leadership research has shifted from traditional hierarchical models to more dynamic, inclusive, and collaborative approaches. These approaches emphasize transformational, ethical, inclusive, and strategic learning-oriented leadership to support organizational learning (Liden et al., 2025; Rowell & El Banna, 2025; Ly, 2024). Leaders

who inspire trust, build psychological safety, and promote shared vision become catalysts for innovation and sustainable performance (Zhu et al., 2025; Abdelhadi et al., 2025). In this context, strategic learning self efficacy and individual foresight emerge as core competencies of modern leaders who operate under conditions of volatility and ambiguity (Covin et al., 2025; Innes, 2024).

Moreover, digital transformation and the integration of artificial intelligence into education and industry have redefined how learning is delivered and internalized. This transformation necessitates a reconceptualization of leadership functions to ensure that organizations not only adopt technological tools but also cultivate the necessary learning agility to leverage these innovations for competitive advantage (Cao et al., 2025; Kassa & Worku, 2025; Chigbu & Makapela, 2025). Studies by Matos et al. (2025) and Kovari (2025) reinforce the importance of leadership that bridges digital competencies and pedagogical integrity, particularly in fostering collaborative learning and knowledge sharing across organizational units.

Effective leadership in learning organizations must also navigate the tension between exploration and exploitation, balancing the pursuit of new knowledge with the refinement of existing capabilities (Choi et al., 2025). This duality is crucial for sustaining innovation and maintaining strategic alignment. The role of leadership extends to shaping organizational culture, building employee resilience, and enhancing work engagement through inclusive practices and moral guidance (Veli Korkmaz et al., 2022; Liu et al., 2020). Empirical evidence has shown that such leadership practices contribute to increased productivity, service innovation, and environmental responsiveness, particularly when mediated by organizational learning structures (Husain et al., 2024; Huynh et al., 2024).

In educational institutions, particularly in contexts of reform and innovation, the role of leadership becomes even more critical. According to Vasel (2025), successful implementation of organizational change in school's hinges on leaders' ability to operationalize learning frameworks, mobilize collective participation, and manage resistance. Educational leaders are required not only to possess administrative competence but also to inspire learning cultures that foster creativity, inclusion, and accountability (Abdelhadi et al., 2025; Sailer et al., 2024; Zhang et al., 2025). Therefore, this study seeks to explore and synthesize current thinking on how leadership supports learning organizations across sectors, focusing on the integration of digital tools, organizational learning structures, and leadership traits that align with future oriented, sustainable development.

Despite the growing body of research on leadership, organizational learning, and digital transformation, existing systematic literature reviews tend to examine these domains in isolation. Prior reviews have predominantly focused on leadership styles and their outcomes, organizational learning mechanisms, or the adoption of digital and artificial intelligence–based learning technologies as separate streams of inquiry. As a result, limited attention has been given to how leadership, organizational learning processes, and digital integration jointly interact to shape innovation, adaptability, and sustainable performance within learning organizations. Moreover, existing reviews rarely differentiate the analytical structures used in empirical studies, such as whether relationships are examined through direct effects, moderation, or mediation models, which limits theoretical integration and methodological clarity.

This study addresses these limitations by providing a systematic literature review that explicitly integrates leadership styles, organizational learning processes, and digital transformation within a single analytical framework. In addition, it advances prior work by classifying empirical findings according to their analytical models, namely direct relationships, moderation models, and mediation models. By doing so, the review offers a more structured understanding of how leadership and learning mechanisms operate across organizational contexts and sectors, and clarifies the pathways through which technology-enabled learning contributes to innovation and adaptability. Accordingly, this study is guided by the following research objectives:

1. To synthesize empirical evidence on the role of leadership in shaping organizational learning within learning organizations.
2. To examine how digital transformation and technology integration interact with leadership and organizational learning processes.
3. To classify existing empirical studies based on their analytical models, including direct, moderation, and mediation approaches, in order to identify dominant patterns and research gaps.

Methods

Research Design

This study adopts a systematic literature review (SLR) methodology to examine the role of leadership within the framework of learning organizations. SLR is a structured and replicable approach for synthesizing prior empirical findings, enabling the identification of dominant patterns, conceptual frameworks, and methodological characteristics across diverse studies (Tranfield et al., 2003). This approach is particularly appropriate for advancing theory development and informing future empirical research in organizational learning, where findings are often fragmented across disciplines and sectors.

Search Strategy

The review process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analyses) guidelines to ensure transparency, rigor, and replicability (Moher et al., 2009). The Scopus database was selected as the sole data source due to its extensive coverage of high-quality, peer-reviewed journals across management, education, technology, and social sciences. Scopus is widely recognized for its comprehensive indexing and citation tracking, making it suitable for interdisciplinary reviews. Nevertheless, the use of a single database may limit coverage of certain regional or domain-specific journals not indexed by Scopus, which is acknowledged as a methodological limitation.

The search targeted academic articles published between 2015 and 2024 using the following search string: [TITLE ABS KEY ("learning organization" OR "learning organization" OR "organizational learning" OR "organizational learning") AND PUBYEAR > 2014 AND PUBYEAR < 2025]. A total of 2298 records were initially identified. After screening titles and abstracts for relevance and applying exclusion criteria, 23 articles were retained for full-text analysis. No backward or forward snowballing was conducted, as the database search yielded sufficient coverage for the review's analytical objectives.

Inclusion and Exclusion Criteria

Articles were included based on the following criteria: peer-reviewed journal publications, empirical research design, English-language publication, and explicit examination of leadership within learning organization contexts. Conceptual papers, editorials, conference proceedings, and studies without a clear leadership component were excluded. These criteria ensured analytical consistency and relevance across the final dataset.

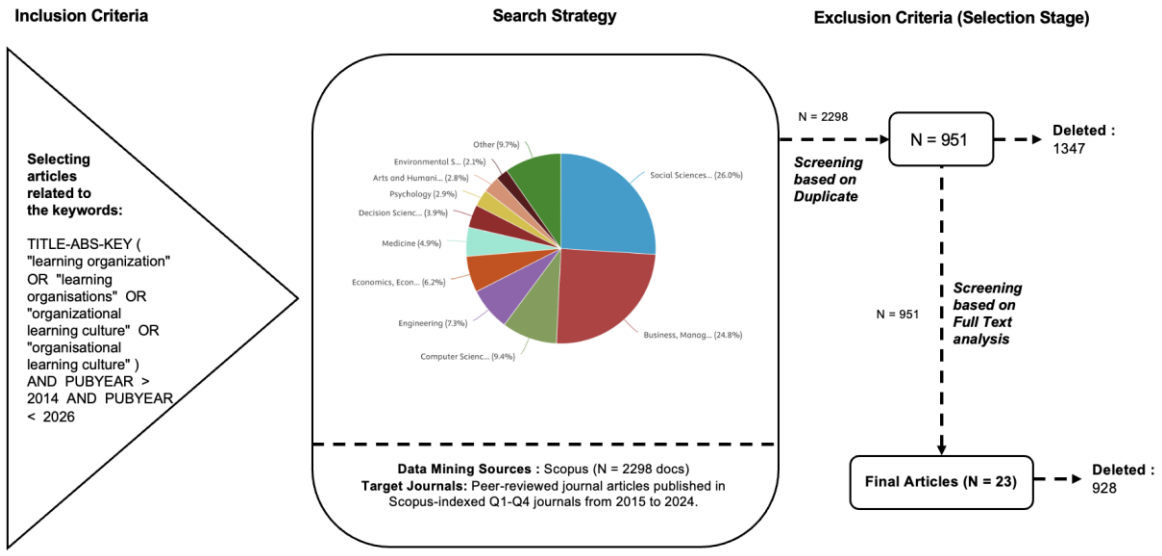

Figure 1. Search Strategy Using PRISMA

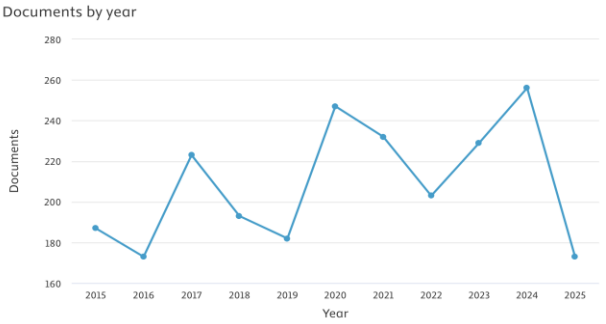

Figure 2. Documents by the Year

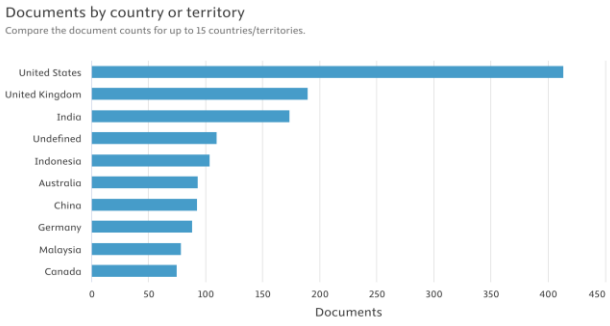

Figure 3. Documents by Country/Territory

Data Extraction and Coding

The selected articles were reviewed manually and systematically. Data extraction focused on leadership styles, organizational learning outcomes, technology integration, methodological approaches, sectoral context, and analytical structure. Coding was conducted through a structured thematic process involving initial categorization of key variables, followed by grouping into higher-order themes. Particular attention was given to classifying studies according to their analytical models, namely direct relationships, moderation models, and mediation models. While formal inter-rater reliability testing was not applied, the coding followed predefined criteria to ensure internal consistency, which is acknowledged as a further methodological limitation.

Methodological Contribution

Although SLR and PRISMA are well-established approaches, the methodological contribution of this study lies in its integrative focus on leadership, organizational learning, and digital transformation within a single review framework covering the period 2015 to 2025. In addition, the explicit classification of empirical studies based on direct, moderation, and mediation models provides a structured analytical foundation that informs the discussion and future research directions.

Ethical Considerations

As the study relies exclusively on previously published academic sources, it does not involve human participants or primary data collection and is therefore exempt from formal ethical approval. All sources were appropriately cited and referenced in accordance with academic integrity standards.

Result and Discussion

Descriptive Analysis

Descriptive analysis outlines publication trends and the geographical distribution of studies included in this systematic literature review. By examining the number of documents published each year alongside their respective countries or territories of origin, this analysis helps contextualize the evolving academic focus and the global engagement with issues surrounding learning organizations and leadership. Such descriptive mapping is essential for understanding the broader landscape before delving into more detailed thematic and methodological findings.

As shown in Figure 2, the annual volume of research publications on learning organizations and leadership exhibited noticeable fluctuations over the last decade. The number of documents published each year ranged from approximately 170 to 260, with pronounced peaks in 2017, 2020, and 2024. These surges in scholarly output occur during periods of intensified digital transformation and organizational innovation, as reflected in the timing of publication trends. Conversely, certain years such as 2016, 2019, and 2025 saw reduced output, indicating possible shifts in research priorities or changes in the publication landscape. Overall, these patterns suggest that interest in learning organizations remains robust, yet is subject to the influence of broader contextual developments.

Geographical mapping, as illustrated in Figure 3, indicates that the United States leads in the number of publications,

followed by the United Kingdom and India. Indonesia's position among the top five contributors highlights the growing prominence of Southeast Asian scholarship in this domain. Other countries, including Australia, China, Germany, Malaysia, and Canada, are also actively engaged, although to a lesser extent. Additionally, the presence of an "Undefined" category suggests some documents stem from collaborative or cross border research initiatives where national attribution is unclear. This global distribution demonstrates that research on learning organizations and leadership is not only widespread but also marked by increasing diversity and international collaboration.

Theme 1. Leadership Styles Influencing Organizational Learning

Leadership styles were consistently recognized as foundational drivers of organizational learning, shaping how individuals, teams, and institutions absorb, interpret, and apply new knowledge. Across the reviewed studies, leadership behaviors set the cognitive, emotional, and structural conditions that enable learning to occur. Abdelhadi et al. (2025), for example, demonstrated that leadership inspiration in the nursing sector emerged from developmental and educational experiences, suggesting that leaders who embraced continuous self-development cultivated cultures in which learning was perceived as a core organizational value rather than an optional activity. This finding highlights the close interdependence between leadership identity and learning orientation.

Transformational leadership appeared repeatedly as the style most closely associated with fostering learning organizations. Baráth (2015) argued that effective schools rely on leaders who encourage shared visioning, open communication, and reflective dialogue, all of which are central pillars of organizational learning. Similarly, Rowell and El Banna (2025) found that inspirational nursing leaders facilitate collective learning by modeling openness, empathy, and continuous competence improvement. Taken together, these studies suggest that transformational leadership strengthens learning organizations by promoting empowerment, intellectual stimulation, and collaborative sensemaking.

Leadership was also linked to the capacity to drive innovation, particularly in environments undergoing rapid technological change. Cao et al. (2025) highlighted that leaders who cultivate innovative organizational cultures can leverage digital transformation to enhance knowledge flows. Their findings show that leadership openness strongly mediates the relationship between digital transformation and product innovation, indicating that leadership style functions as a cognitive filter shaping how new technologies are integrated and interpreted. These insights align with Chigbu and Makapela (2025), who found that leaders with human-centric and future-oriented mindsets are more effective in embedding learning principles within Industry 5.0 and Education 5.0 ecosystems. Collectively, these studies emphasize that leadership openness and future orientation are critical for translating technological change into organizational learning.

Leadership styles were further associated with balancing exploration and exploitation, two learning modes essential for organizational adaptation. Choi et al. (2025) demonstrated that granting individual autonomy enables organizations to navigate the tension between experimenting with new possibilities and refining existing competencies. Leaders who value autonomy and distributed decision making encourage employees to internalize learning, engage in experimentation, and pursue reflective improvement. Overall, this body of work suggests that autonomy-supportive leadership fosters psychological safety, which underpins both exploratory learning and knowledge retention.

Strategic leadership styles also played a crucial role in shaping learning capability. Covin et al. (2025) found that leaders with high strategic learning self-efficacy are more likely to develop learning systems capable of adapting to environmental uncertainty. Their study indicated that leadership confidence in learning processes directly affects firm growth through enhanced absorptive capacity and strategic action. These findings indicate that strategic leadership influences not only what organizations learn, but also how learning resources are prioritized and mobilized under uncertainty.

Ethical leadership similarly emerged as an enabler of organizational learning. Zhu et al. (2025) showed that ethical leaders cultivate trust and transparency, which strengthens learning orientation and improves corporate environmental, social, and governance performance. Their moderated mediation model suggests that ethical decision making enhances learning behaviors across organizational units. More broadly, ethical leadership appears to support organizational learning by reducing fear of error, encouraging reflective dialogue, and sustaining integrity-based learning cycles.

Inclusive leadership was another leadership style strongly linked to organizational learning. Ly (2024) demonstrated that leaders who embrace inclusivity significantly enhance employee engagement, which in turn promotes participation in learning activities. Inclusive leaders encourage diverse perspectives, increasing the richness of organizational knowledge and reducing bias in decision making. Veli Korkmaz et al. (2022) further argued that inclusivity fosters belonging, thereby expanding collective learning processes. Together, these studies suggest that inclusive leadership broadens the knowledge base of learning organizations and strengthens shared learning ownership.

Finally, foresight-driven leadership emerged in studies addressing the future orientation of organizational learning. Innes (2024) found that leaders with strong foresight capabilities enhance organizational innovation by helping employees anticipate change, recognize weak signals, and integrate long-term thinking into daily practices. Foresight-oriented leadership positions organizational learning as a proactive and anticipatory process rather than a reactive one. Overall, these findings indicate that foresight-driven leadership strengthens organizational resilience by aligning learning with long-term strategic preparedness.

Theme 2. Organizational Learning as a Catalyst for Innovation and Adaptability

Organizational learning has been widely acknowledged as a strategic mechanism through which institutions adapt to external complexity, uncertainty, and technological change. Across the reviewed studies, learning is framed not merely as knowledge acquisition, but as the capacity to translate insights into innovative solutions and adaptive responses. Ghosh et al. (2025), for instance, highlighted that learning plays a pivotal role in aligning organizational strategy with environmental demands, particularly in dynamic industries such as telecommunications. Their study of Indian telecom firms showed that continuous learning enhances competitive advantage by improving organizational responsiveness and decision-making precision.

The link between organizational learning and innovation is especially salient in contexts of digital transformation. Wang et al. (2025) demonstrated that organizational learning capability significantly influences digital innovation performance, suggesting that learning orientation amplifies the benefits of digital resources when supported by investments in human capital and technological infrastructure. In this regard, organizational learning functions as a mediating mechanism that connects technological inputs with innovation outputs,

reinforcing the argument that digital innovation without learning capacity is unlikely to be sustainable.

Adaptability emerged as another central outcome of organizational learning across multiple sectors. Naji and Ghapanchi (2025) showed that agile project governance depends heavily on knowledge sharing and continuous learning to respond to changing stakeholder expectations. Their findings suggest that learning is embedded in everyday operational routines rather than occurring as episodic interventions. Organizations with strong learning cultures therefore appear more capable of rapidly adjusting strategies and structures in turbulent environments.

In educational settings, organizational learning was consistently associated with pedagogical and curricular innovation. Dinari et al. (2023) found that academic institutions that embraced organizational learning were better positioned to implement knowledge management practices and improve teaching innovation. Faculty engagement in reflective learning and interdepartmental knowledge exchange created conditions for continuous improvement, positioning organizational learning as a foundational infrastructure for educational transformation.

Organizational learning also contributes to strategic foresight and anticipatory capacity. Chigbu and Makapela (2025) argued that in Industry 5.0 and Education 5.0 contexts, continuous learning enables organizations to recognize emerging trends and integrate them into strategic planning. Learning practices such as environmental scanning, scenario building, and reflective feedback loops support what they describe as futures literacy. This view aligns with Innes (2024), who positioned organizational learning as a prerequisite for innovation readiness and long-term sustainability.

The role of organizational learning in navigating institutional complexity was further reinforced by Gebauer et al. (2024). Their study of multinational corporations showed that dynamic capabilities depend on learning mechanisms that facilitate rapid feedback assimilation, error correction, and integration of diverse knowledge systems. In this sense, organizational learning operates not only as a buffer against complexity but also as a source of strategic differentiation in highly institutionalized environments.

Digital innovation ecosystems are particularly dependent on organizational learning as a coordinating force. Karim et al. (2022) found that innovation flourishes in settings where collective learning is institutionalized through transparent, experimental, and cross-disciplinary practices. These learning architectures enable faster innovation cycles and support both formal and informal learning pathways, reinforcing the systemic role of learning in digital ecosystems.

Finally, organizational learning was found to strengthen resilience and post-crisis recovery. Agboola et al. (2024) showed that organizations investing in learning during crises, through practices such as after-action reviews, knowledge audits, and resilience workshops, were better able to recover and adapt. Learning facilitates the institutionalization of lessons learned, reducing the repetition of errors and improving long-term performance.

Despite these robust findings, several limitations are evident across the reviewed studies. First, much of the evidence is based on cross-sectional research designs, which constrain causal inference regarding the relationship between organizational learning, innovation, and adaptability. Second, organizational learning is frequently measured using self-reported perceptual scales, raising concerns about common method bias and the subjective assessment of learning outcomes. Longitudinal and multi-source data remain relatively underutilized, limiting insight into how learning capabilities evolve over time and across organizational levels. Synthesizing the reviewed evidence, three conceptual propositions can be advanced:

1. Organizational learning functions as a mediating capability that translates technological and strategic inputs into innovation outcomes.
2. Learning embedded in daily routines enhances organizational adaptability by enabling rapid sensemaking and strategic adjustment.
3. Sustained organizational learning underpins resilience by institutionalizing reflection, feedback, and anticipatory thinking across contexts.

Theme 3. Challenges and Barriers to Organizational Learning

Despite the widely recognized strategic importance of organizational learning, the literature consistently highlights a set of persistent barriers that hinder its effective implementation. These barriers can be systematically categorized across four analytical levels: individual, organizational, technological, and environmental.

At the organizational level, limited leadership commitment emerges as a primary barrier. Chigbu and Makapela (2025) observed that many leaders prioritize short-term efficiency metrics over long-term investments in learning infrastructure. This short-term orientation constrains the development of reflective practices and collaborative knowledge exchange, thereby weakening innovation and adaptability. Organizational rigidity further exacerbates this challenge. Gebauer et al. (2024) noted that hierarchical structures resist decentralization, limiting experiential learning and suppressing feedback loops. In such contexts, decision making remains top-down, reducing psychological safety and restricting learning from failure, particularly in volatile or digitally transforming environments.

Cultural barriers within organizations also play a significant role. Ghosh et al. (2025) identified entrenched values and legacy routines as obstacles to knowledge assimilation. Employees may perceive new learning initiatives as threats to established norms, leading to passive resistance or, in some cases, active opposition. This cultural inertia is especially pronounced in mature organizations with deeply institutionalized practices, where learning is framed as risk rather than opportunity.

At the individual level, psychological factors inhibit participation in learning processes. Wang et al. (2025) found that fear of failure, fear of judgment, and low intrinsic motivation reduce employees' willingness to engage in learning initiatives. In performance-driven cultures that penalize mistakes, experimentation is discouraged, resulting in superficial learning that fails to translate into behavioral or strategic change. Technological barriers arise when digital tools are poorly integrated into organizational routines. While technology is often positioned as an enabler of learning, Naji and Ghapanchi (2025) demonstrated that knowledge management and collaboration platforms are frequently underutilized due to inadequate training, weak user interface design, and low perceived usefulness. As a result, learning technologies exist in parallel to daily work rather than being embedded within it. This misalignment highlights the need to integrate technological change with human-centric learning strategies.

Fragmentation across departments further limits organizational learning. Dinari et al. (2023) showed that siloed structures and weak interdepartmental coordination obstruct the sharing of pedagogical insights and innovative practices. Territorial behavior and localized knowledge ownership reduce cross-functional learning and undermine the collective intelligence required for sustained adaptation. A further organizational barrier concerns measurement and accountability. Karim et al. (2022) argued that many organizations launch training or knowledge-sharing initiatives without clear indicators to assess learning outcomes. Without

mechanisms to evaluate what has been learned, retained, or applied, learning is treated as a peripheral activity rather than a strategic driver of performance and transformation.

Finally, environmental and institutional pressures can deprioritize learning altogether. Agboola et al. (2024) found that during periods of regulatory change, economic instability, or crisis, organizations often suspend learning initiatives in favor of immediate operational survival. This shift reduces opportunities for reflective practice and systemic learning precisely when adaptive capacity is most critical. Paradoxically, the contexts that most demand learning are often those in which it is least supported. Taken together, these findings suggest that barriers to organizational learning are multi-level and mutually reinforcing. Addressing them requires integrated leadership responses that align individual motivation, organizational culture, technological systems, and environmental constraints.

Theme 4. Leadership Roles in Shaping Learning Organization Practices

While Theme 1 emphasizes leadership styles associated with organizational learning, this theme focuses on the specific roles and mechanisms through which leaders operationalize learning within organizations. Leadership in this context is less about personal style and more about how leaders actively design, enable, and sustain learning processes at the organizational level. Effective leaders do not merely supervise learning activities; they shape the vision, values, and systems that embed learning into everyday practice. Chigbu and Makapela (2025) highlight that leadership in learning organizations is characterized by strategic foresight, dialogical communication, and empowerment, positioning leaders as architects of learning environments rather than directive controllers.

A central leadership role in learning organizations is the creation of psychological safety to facilitate knowledge flow. Leaders who model openness and vulnerability enable environments in which employees feel safe to express dissenting views, admit mistakes, and take intellectual risks. Gebauer et al. (2024) argue that this requires leaders to shift from traditional authority figures to learning facilitators who promote inclusive dialogue and the co-construction of meaning. This role is particularly critical in hierarchical or multicultural organizations, where power asymmetries may otherwise suppress participation in learning processes.

Leaders also act as boundary spanners, linking internal learning systems with external environments. Ghosh et al. (2025) note that effective organizational learning depends on leaders' ability to interpret signals from markets, technological developments, and policy contexts, and translate these signals into actionable learning agendas. Through this role, leaders ensure that learning remains anticipatory and externally relevant, supporting dynamic capabilities rather than inward-looking routines. In fast-changing sectors such as education and public administration, boundary spanning leadership becomes essential for navigating uncertainty and complexity.

Another key role of leadership lies in aligning learning with organizational strategy. Wang et al. (2025) describe how leaders integrate learning objectives into performance indicators, legitimizing learning as a core organizational function. By embedding learning within strategic and evaluative frameworks, leaders signal that continuous improvement is a necessity rather than a discretionary activity. This alignment also facilitates resource mobilization, as learning initiatives are positioned as long-term investments rather than operational costs.

Leadership further shapes learning through the design and integration of learning infrastructures. Naji and Ghapanchi (2025) demonstrate that digital learning platforms and knowledge management systems require sustained leadership support to be effectively adopted. Leaders must not only provide technological resources but also ensure their integration into daily work practices. This role involves balancing top-down policy direction with bottom-up engagement, accounting for employee learning preferences and organizational culture.

The cultivation of peer learning and communities of practice represents another important leadership role. Dinari et al. (2023) show that in academic institutions, leaders who actively support peer mentoring and collegial exchange foster higher levels of pedagogical innovation and reflective practice. These informal learning spaces complement formal training and enable contextualized knowledge sharing. Leadership here involves legitimizing horizontal knowledge flows and recognizing knowledge contributions beyond hierarchical structures.

Equity and inclusiveness in learning access are also shaped by leadership action. Karim et al. (2022) argue that leaders play a critical role in ensuring that learning opportunities are equitably distributed across organizational levels and demographic groups. Without intentional leadership intervention, learning systems may reproduce existing power imbalances. Inclusive leadership in this role requires deliberate efforts to democratize knowledge creation and participation. Finally, during periods of crisis or transformation, leaders function as sensemakers and stabilizers of learning. Agboola et al. (2024) note that leaders who sustain a learning orientation during disruption are better able to support organizational resilience. This role involves facilitating double-loop learning, encouraging adaptive experimentation, and enabling collective sensemaking. In such contexts, leaders simultaneously provide stability and foster the cognitive flexibility necessary for organizational renewal.

Theme 5. Technological Integration and Digital Learning

The integration of digital technologies has fundamentally reshaped the landscape of organizational learning. Rather than serving solely as administrative or support tools, digital platforms and artificial intelligence are increasingly positioned as enablers and accelerators of continuous learning at both individual and organizational levels. Kovari (2025), for example, describes how higher education institutions have adopted AI-powered collaborative learning platforms that support personalization, peer-to-peer interaction, and real-time feedback. These platforms extend the scope of learning organizations by embedding learning into everyday academic and professional practices. This shift is not confined to education but is also evident in corporate and public sector settings, where digital transformation intersects with knowledge management and innovation.

A prominent development in this area is the transition from static, instructor-centered learning models to dynamic, technology-mediated environments. Learning management systems, interactive simulations, virtual laboratories, and gamified modules are widely reported to enhance learner engagement and knowledge retention (Sailer et al., 2024). At the individual level, these tools support skill development, self-paced learning, and higher-order cognitive processing through adaptive content and embedded analytics. At the organizational level, they contribute to standardized learning processes, scalable training, and improved knowledge transfer across units.

Digital transformation also shapes organizational culture and innovation capacity. Cao et al. (2025) argue that leaders who actively embrace digital tools cultivate cultures of experimentation and openness to change. Technologies such as collaborative platforms and enterprise learning systems reduce hierarchical bottlenecks, facilitate cross-boundary information flows, and support more participatory decision-

making processes. In this sense, digital learning technologies influence not only how individuals learn but also how organizations coordinate learning and innovation collectively.

Artificial intelligence introduces additional modalities for both autonomous and collaborative learning. AI-driven tools, including intelligent tutoring systems, chatbots, predictive analytics, and automated feedback mechanisms, enable organizations to identify skill gaps, recommend personalized learning pathways, and deliver targeted interventions (Matos et al., 2025; Chigbu & Makapela, 2025). At the individual level, AI enhances learning personalization and feedback quality. At the organizational level, it enables data-driven learning governance, allowing learning outcomes to be monitored, optimized, and aligned with strategic objectives.

Despite these opportunities, the literature also identifies persistent challenges in digital integration. Liu et al. (2020) report that adoption of learning technologies is shaped by perceived ease of use, digital literacy, and institutional support. Resistance to change, insufficient training, and data privacy concerns frequently limit effective use. These findings underscore the critical role of leadership in aligning technological adoption with broader organizational learning goals and ensuring that digital tools are meaningfully embedded into work routines rather than operating as parallel systems.

Contextual factors further moderate the effectiveness of digital learning. In school settings, successful integration depends on both technological infrastructure and teacher readiness (Baráth, 2015). Similarly, Abdelhadi et al. (2025) show that in nursing education, digital learning platforms are most effective when combined with developmental leadership practices that support continuous professional growth and peer learning. These findings reinforce the view that technology functions as an enabler whose impact depends on complementary human and organizational conditions.

Technology-enabled learning also expands inclusivity and access. Digital platforms, including asynchronous learning systems and multilingual tools, help bridge geographic, demographic, and disciplinary divides (Ly, 2024; Veli Korkmaz et al., 2022). At the organizational level, inclusive digital strategies support broader participation in learning and reduce structural barriers to knowledge access, provided that leaders prioritize digital literacy and equitable access.

A key contribution of the reviewed technology-focused studies is their demonstration that digital tools are not merely channels for content delivery but structural enablers of learning-organization capabilities. Across sectors, technologies such as AI systems, learning management platforms, simulations, and collaborative tools function at multiple levels: enhancing individual learning experiences while simultaneously reshaping organizational learning structures, decision-making processes, and adaptive capacity. This multi-level impact positions digital integration as a strategic foundation for learning organizations rather than a supplementary operational upgrade.

Finally, digital learning ecosystems support continuous organizational adaptation in fast-changing environments. Jiang et al. (2025) note that evolving user preferences and interdisciplinary applications are reshaping technology acceptance in online learning. As organizations navigate Industry 5.0 and Education 5.0, the ability to integrate digital technologies seamlessly into learning processes emerges as a defining feature of future-oriented organizations seeking long-term sustainability and competitive advantage.

Theme 6. Sectoral and Contextual Variations in Learning Organization Leadership

Sectoral and contextual variations are critical factors shaping the dynamics of learning organization leadership. The literature reveals that the application and effectiveness of leadership practices in fostering organizational learning are highly contingent on the nature of the sector, regulatory environment, and cultural context. Baráth (2015) demonstrates that in the education sector, school leaders must adapt their approaches to diverse institutional missions and student populations. The focus on inclusive visioning and participatory decision making is more pronounced in schools aiming to develop both academic and social emotional learning outcomes, compared to technical colleges or research universities where performance and innovation metrics often take precedence.

Healthcare organizations provide a unique landscape where learning is closely intertwined with professional development, patient safety, and rapid technological advancement. Abdelhadi et al. (2025) show that nursing leaders emphasize developmental leadership, promoting continuous education and reflective practice as integral to high quality care. This sector places a premium on collaborative learning, mentorship, and rapid dissemination of evidence-based practices, with leadership styles tending toward transformational and servant leadership. The urgency of adopting new clinical protocols and technologies underscores the need for leaders to foster adaptability and resilience within multidisciplinary teams.

The corporate and industrial sectors illustrate different contextual demands. Cao et al. (2025) highlight that digital transformation and product innovation in private firms are highly dependent on leadership's capacity to champion experimentation, risk taking, and cross functional learning. Here, leaders serve not only as visionaries but also as facilitators of systems thinking and process integration. In sectors marked by intense competition and technological flux, such as information technology and manufacturing, leadership practices are often more strategic and outward facing, focusing on market intelligence and absorptive capacity.

Public sector organizations, meanwhile, confront unique challenges relating to bureaucracy, accountability, and stakeholder complexity. Ly (2024) observes that inclusive leadership is especially important in these settings, where employee engagement and organizational commitment directly impact public service quality. Leaders are called to balance compliance with innovation, encouraging learning without undermining regulatory standards. The multiplicity of stakeholders and procedural constraints often means that leadership for learning is a slow, negotiated process, requiring persistent advocacy for change.

Cultural and geographic contexts further mediate the expression and outcomes of learning organization leadership. Chigbu and Makapela (2025) and Veli Korkmaz et al. (2022) argue that leadership practices effective in collectivist societies, where consensus, hierarchy, and relational harmony are valued, may need significant adaptation for individualist contexts that prioritize autonomy and individual achievement. Leadership in East Asian or Middle Eastern organizations, for example, is often more paternalistic and relational, whereas Western firms may emphasize empowerment and distributed leadership.

Regulatory environments and policy frameworks also exert powerful influences. Vasel (2025) shows that educational change efforts are heavily shaped by national curricula, accreditation standards, and policy incentives, which in turn determine the scope of autonomy and risk taking available to organizational leaders. In highly regulated sectors such as healthcare and finance, leadership for learning must navigate complex compliance landscapes, seeking spaces for innovation within tight legal boundaries.

Organizational history and maturity stage introduce another layer of contextual variation. Newer firms and startups, as highlighted by Covin et al. (2025), are often more agile and open to learning, with leaders willing to experiment and adopt

emerging technologies. In contrast, legacy organizations may face inertia and resistance rooted in established routines, requiring leadership to focus on culture change and incremental learning interventions. The interplay between legacy systems and innovation ambition becomes a defining leadership challenge.

Finally, crisis and disruption often amplify the impact of contextual factors. Agboola et al. (2024) note that during periods of economic turbulence or public health emergencies, sectoral norms may temporarily shift, compelling leaders to accelerate learning cycles and promote resilience. The capacity of leaders to pivot organizational learning strategies in response to external shocks determines not only immediate survival but also long-term renewal. Across all sectors, it is the contextual intelligence of leadership, an ability to read, adapt, and influence complex environments, that ultimately differentiates high performing learning organizations.

Building on the six themes identified in the Results section, this Discussion reorganizes the synthesized evidence according to the analytical models employed in prior empirical studies, namely direct relationships, moderation models, and mediation models. While Themes 1 through 6 highlight leadership styles, learning mechanisms, technological integration, contextual variation, and implementation challenges, this section reframes those findings to clarify how leadership and organizational learning operate through different analytical pathways. This model-based reorganization enables a more precise understanding of the mechanisms through which leadership influences learning, innovation, and organizational performance.

A key contribution of this review lies in its comparative treatment of analytical approaches. Existing systematic literature reviews in the domains of leadership, organizational learning, or digital learning tend to emphasize direct relationships, often examining the immediate effects of leadership styles or learning practices on performance outcomes. In contrast, this review demonstrates that a substantial portion of recent empirical work adopts more complex analytical structures, including moderation and mediation models, although these remain less prevalent. By systematically comparing these approaches, the review advances a more integrated research agenda that captures not only whether leadership matters, but under what conditions and through which mechanisms its effects unfold.

From a critical perspective, the findings also reveal important methodological limitations in the existing literature. Many of the reviewed studies rely on cross-sectional designs, which constrain causal inference regarding leadership, organizational learning, and performance outcomes. In addition, moderation and mediation models, while theoretically rich, are still underrepresented relative to direct-effect studies. This imbalance suggests that the field has not yet fully explored the contextual contingencies and process mechanisms that shape learning organizations, highlighting a clear opportunity for future research.

Synthesizing insights across Themes 1 to 6, an integrative conceptual understanding can be proposed. Leadership styles, such as transformational, ethical, inclusive, and foresight-driven leadership, exert direct influences on organizational learning orientation and learning climate. These effects are mediated by internal mechanisms, including technology use, employee productivity, knowledge sharing, and learning routines, and are further moderated by contextual factors such as sectoral characteristics, organizational culture, digital readiness, and environmental uncertainty. Within this framework, organizational learning functions as a central conduit through which leadership and technology investments are translated into innovation, adaptability, resilience, and sustainable performance.

Recommended Future Research Using Direct Relationships

The investigation of direct relationships between organizational variables and outcomes remains a foundational approach in the study of learning organizations and leadership. Direct path models are crucial for clarifying the immediate impact that key constructs, such as leadership style, organizational culture, or technology use, have on various performance indicators. For instance, Baráth (2015) demonstrated that direct investment in building learning organizations contributes measurably to school effectiveness,

Table 1. Studies Employing Direct Relationships

No.	Study Reference	Direct Path Analysed
1	Abdelhadi et al. (2025)	Education → Nursing Leadership
2	Baráth (2015)	Learning Organisation → School Effectiveness
3	Cao et al. (2025)	Organizational Culture → Digital Transformation → Product Innovation
4	Chigbu & Makapela (2025)	Artificial Intelligence Capability → Future of Work Readiness
5	Choi et al. (2025)	Individual Autonomy → Exploration–Exploitation Balance
6	Covin et al. (2025)	Strategic Self-Efficacy & Decision-Making Style → Firm Growth Performance
7	Hael et al. (2024)	Organizational Learning → Innovation (theoretical linkage via bibliometric analysis)
8	Huynh et al. (2024)	Environmental Policy Instruments → Organizational Innovation & Performance
9	Innes (2024)	Individual Foresight Capabilities → Organizational Innovation Behaviour
10	Jiang et al. (2025)	Perceived Usefulness & Ease of Use → Online Educational Platform Adoption (TAM framework)
11	Kovari (2025)	AI-Powered Learning Tools → Student Academic Outcomes
12	Liden et al. (2025)	Evolution of Leadership Theories → Contextual Application in Organisations
13	Liu et al. (2020)	Learning Technology Factors → Academic Technology Adoption
14	Ly (2024)	Inclusive Leadership → Employee Work Engagement
15	Matos et al. (2025)	Use of AI in Pedagogy → Educational Efficiency
16	Rowell & El-Banna (2025)	Effective Leadership Characteristics → Nursing Leadership Performance
17	Sailer et al. (2024)	Technology-Enhanced Learning Activities → Learning Outcomes
18	Vasel (2025)	Lewin's Change Components → Change Adoption
19	Veli Korkmaz et al. (2022)	Inclusive Leadership Dimensions → Employees' Perceived Belongingness and Uniqueness
20	Zhang et al. (2025)	Active Learning Strategies → Academic Learning Effectiveness

highlighting the value of fostering open communication and participatory leadership (see Table 1). Similarly, Ly (2024) identified a clear, positive effect of inclusive leadership on employee work engagement within the public sector, reinforcing the role of leadership inclusivity in promoting organizational learning climates.

Direct effect research also serves to validate and refine core theoretical assumptions in the literature. The direct influence of organizational culture on digital transformation and innovation, as shown by Cao et al. (2025), illustrates how specific cultural attributes can enable or constrain organizational adaptation. Studies such as Kovari (2025), which analyzed the direct impact of AI powered learning tools on student outcomes, provide empirical support for the integration of advanced technology in educational settings. These findings are consistent with Liu et al. (2020), who confirmed the importance of perceived usefulness and ease of use in the adoption of academic technology platforms, aligning with the Technology Acceptance Model and affirming the utility of direct relationship analyses for practical intervention.

Moreover, examining direct relationships is instrumental for informing organizational decision making and evidence-based management. When leadership characteristics are directly linked to improvements in nursing leadership performance (Rowell & El Banna, 2025) or when environmental policy instruments can be tied to innovation outcomes in organizations (Huynh et al., 2024), practitioners gain actionable guidance for strategic planning. By focusing on these unmediated pathways, future research can continue to identify high impact leverage points and ensure that interventions target constructs most likely to yield measurable benefits.

Recommended Future Research Using Moderation Models

Moderation models add a valuable layer of complexity to organizational research by elucidating the conditions under which established relationships hold true or vary in strength (see table 2). These models highlight how contextual or situational factors can enhance or diminish the effect of key predictors. Husain et al. (2024) offered a compelling example by demonstrating that organizational flexibility can strengthen the positive effect of organizational support on service innovation. This suggests that leaders aiming to boost innovation should not only provide support but also foster an agile, responsive work environment that adapts to shifting needs and opportunities.

Table 2. Studies Employing Moderation Models

No.	Study Reference	Moderation Structure Analysed
1	Husain et al. (2024)	Organizational Flexibility moderates the relationship between Organizational Support and Service Innovation
2	Zhu et al. (2025)	Interaction of Ethical Leadership and Organizational Learning as Moderated Mediation on ESG Performance

Another important illustration of moderation is found in Zhu et al. (2025), who explored the interplay between ethical leadership and organizational learning within the framework of corporate ESG performance. Their research revealed that the positive influence of ethical leadership on ESG outcomes is contingent upon the level of organizational learning, providing evidence that leadership and learning do not operate in isolation. Instead, their interaction, shaped by broader organizational dynamics, is critical for achieving sustainable performance. Such insights are invaluable for practitioners who must account for varying organizational climates and readiness when designing change initiatives.

The utility of moderation analysis lies in its ability to guide tailored interventions that are sensitive to organizational context. As demonstrated by the reviewed studies, what works in one environment may not be effective in another, due to factors like culture, structure, or resource availability. Integrating moderation models into future research not only advances theoretical sophistication but also ensures that organizational strategies are both adaptive and robust (Husain et al., 2024; Zhu et al., 2025). This supports a shift from generic best practices to contextually anchored solutions, enhancing the practical relevance of organizational learning scholarship.

Recommended Future Research Using Mediation Models

Mediation models are essential for unpacking the mechanisms and processes that underlie observed relationships between antecedents and outcomes in learning organizations (see table 3). Rather than viewing relationships as linear and direct, mediation analysis allows researchers to identify intermediate variables that transmit or explain the effects of leadership, technology, or organizational support. Kassa and Worku (2025) exemplified this by demonstrating that employee productivity mediates the impact of artificial intelligence adoption on organizational performance. These findings advance understanding by showing that technology alone does not guarantee success; its benefits are realized through its influence on workforce effectiveness.

Table 3. Studies Employing Mediation Models

No.	Study Reference	Mediation Structure Analysed
1	Kassa & Worku (2025)	Employee Productivity mediates the effect of Artificial Intelligence on Organizational Performance
2	Husain et al. (2024)	Organizational Learning mediates the relationship between Organizational Support and Service Innovation
3	Zhu et al. (2025)	Organizational Learning mediates the influence of Ethical Leadership on ESG Performance

Husain et al. (2024) also contributed to this area by revealing that organizational learning itself serves as a mediator between organizational support and service innovation. Their findings indicate that support from management does not automatically translate into innovative outcomes; rather, it is the creation of learning opportunities and knowledge sharing mechanisms that enable organizations to convert support into tangible innovation. Similarly, Zhu et al. (2025) found that organizational learning mediates the relationship between ethical leadership and ESG performance, underlining the centrality of learning processes as conduits for realizing strategic leadership goals.

The implications of mediation analysis extend to both research and practice, as it encourages a focus on process-oriented interventions. By mapping out the internal mechanisms between input and outcome variables, mediation models support the design of multi component organizational strategies. This approach enables leaders and practitioners to target not only the endpoints of change but also the critical internal dynamics, such as productivity, knowledge sharing, or ethical culture, that drive sustainable improvement (Kassa & Worku, 2025; Husain et al., 2024; Zhu et al., 2025). Mediation thus enriches both the explanatory power of organizational theory and the effectiveness of change management initiatives.

Conclusion

This study investigated the relationship between leadership

and organizational learning within the evolving context of technological advancement and digital transformation. The primary objective was to synthesize recent empirical evidence on how various leadership styles, organizational learning processes, and technology integration collectively shape innovation, adaptability, and sustainable performance across a range of organizational sectors. The findings revealed that leadership influences organizational learning outcomes through direct, moderated, and mediated pathways, each of which plays a distinct role in driving innovation, employee engagement, and institutional change.

The review highlighted those direct relationships, such as those connecting inclusive leadership to employee engagement or organizational culture to digital transformation, are foundational for understanding how organizational learning operates. Moderation models demonstrated that factors like organizational flexibility and contextual readiness can alter the strength of the relationship between leadership and organizational outcomes. Mediation models brought attention to the processes, such as employee productivity and the facilitation of learning itself, which explain how leadership and technology investments are translated into improved organizational performance. Importantly, sectoral and contextual variations emerged as significant, with unique patterns and challenges identified in healthcare, education, public administration, and private sector organizations.

The results of this review carry several important theoretical and practical implications. First, there is a need for leadership development initiatives that integrate transformational, inclusive, and digital competencies in order to navigate complex and rapidly changing environments. Second, the findings emphasize the value of organizational agility and flexibility, especially during periods of technological change or crisis response. Third, the importance of mediation and moderation structures indicates that interventions should be customized to organizational context, maturity, and sector specific needs, rather than relying on universal solutions. By clarifying the analytical models most suitable for future research, this study provides a roadmap for further theoretical development and practical application in the field.

Despite the valuable insights provided, several limitations must be considered. The review was limited to peer reviewed articles published in English between 2015 and 2025, which may exclude relevant studies from other languages or outside this period. The reliance on secondary literature prevented meta-analytic effect size estimation and may introduce publication bias. Furthermore, the diversity of organizational settings and methodologies among the selected studies limits direct comparability and constrains the generalization of specific results across contexts.

Future research should focus on empirically validating the integrated models outlined in this study, particularly across diverse cultural, technological, and organizational environments. Longitudinal research would help assess how leadership and learning organization dynamics evolve over time and in response to external change. Comparative studies across sectors and regions would further illuminate the specific mechanisms that drive effective organizational learning and leadership. Finally, experimental and intervention-based designs could clarify causal pathways and inform best practices for building innovative, resilient, and adaptive organizations in the digital age.

References

Abdelhadi, N., Schwartz-Attias, I., Orkaby, B., Visel, N., Yamin, F., Gross-Feldman, N., Luz, S., Goldberg, S., & Melnikov, S. (2025). Education and development as factors inspiring nursing leaders: A qualitative study. Journal of Professional Nursing, 60, 188–196. https://doi.org/10.1016/j.profnurs.2025.07.002

Baráth, T. (2015). Learning Organization as a Tool for Better and More Effective Schools. Procedia Manufacturing, 3, 1494–1502. https://doi.org/10.1016/j.promfg.2015.07.330

Cao, G., Duan, Y., & Edwards, J. S. (2025). Organizational culture, digital transformation, and product innovation. Information & Management, 62(4), 104135. https://doi.org/10.1016/j.im.2025.104135

Chigbu, B. I., & Makapela, S. L. (2025). AI in education, sustainability, and the future of work: An integrative review of industry 5.0, education 5.0, and work 5.0. Journal of Open Innovation: Technology, Market, and Complexity, 11(4), 100645. https://doi.org/10.1016/j.joitmc.2025.100645

Choi, M., Kim, J., & Yang, J.-S. (2025). Finding the right balance: The impact of individual autonomy on balancing exploration and exploitation. Journal of Business Research, 198, 115483. https://doi.org/10.1016/j.jbusres.2025.115483

Covin, J. G., Lisanti, A., Latorre, G., Brownell, K. M., & Kreiser, P. M. (2025). Strategic learning self-efficacy, strategic decision-making style, and environment as determinants of firm growth. Journal of Innovation & Knowledge, 10(1), 100657. https://doi.org/10.1016/j.jik.2025.100657

Garzón, J., & Luján-Mora, S. (2020). Systematic review of research on educational chatbots. Computers & Education, 151, 103–811. https://doi.org/10.1016/j.compedu.2020.103811

Hael, M., Belhaj, F. A., & Zhang, H. (2024). Organizational learning and innovation: A bibliometric analysis and future research agenda. Heliyon, 10(11), e31812. https://doi.org/10.1016/j.heliyon.2024.e31812

Husain, Z., Dayan, B., & Chaudhry, I. S. (2024). Roles of organizational flexibility and organizational support on service innovation via organizational learning – A moderated mediation model. Journal of Open Innovation: Technology, Market, and Complexity, 10(3), 100367. https://doi.org/10.1016/j.joitmc.2024.100367

Huynh, T. N., Nguyen, P. V., Do, A. M., Dinh, P. U., & Vo, H. T. (2024). Fostering organizational performance through innovation: The roles of environmental policy instruments, organizational learning supports, and intellectual capital. Heliyon, 10(20), e39361. https://doi.org/10.1016/j.heliyon.2024.e39361

Ifinedo, P. (2017). Examining technology-related capabilities and technology usage in learning organizations. International Journal of Information Management, 37(5), 431–440. https://doi.org/10.1016/j.ijinfomgt.2017.04.002

Innes, M. L. (2024). Exploring individual foresight: Implications for organizational learning and innovation in firms. Journal of Innovation & Knowledge, 9(4), 100604. https://doi.org/10.1016/j.jik.2024.100604

Jiang, S., Li, H., & Gan, D. (2025). Technology acceptance model for online education: Identifying interdisciplinary topics and their evolution based on BERTopic model. Social Sciences & Humanities Open, 12, 101831. https://doi.org/10.1016/j.ssaho.2025.101831

Kassa, B. Y., & Worku, E. K. (2025). The impact of artificial intelligence on organizational performance: The mediating role of employee productivity. Journal of Open Innovation: Technology, Market, and Complexity, 11(1), 100474. https://doi.org/10.1016/j.joitmc.2025.100474

Kovari, A. (2025). A systematic review of AI-powered collaborative learning in higher education: Trends and outcomes from the last decade. Social Sciences & Humanities Open, 11, 101335. https://doi.org/10.1016/j.ssaho.2025.101335

Liden, R. C., Wang, X., & Wang, Y. (2025). The evolution of leadership: Past insights, present trends, and future directions. Journal of Business Research, 186, 115036. https://doi.org/10.1016/j.jbusres.2024.115036

Liu, Q., Geertshuis, S., & Grainger, R. (2020). Understanding academics' adoption of learning technologies: A systematic review. Computers & Education, 151, 103857. https://doi.org/10.1016/j.compedu.2020.103857

Ly, B. (2024). Inclusion leadership and employee work engagement: The role of organizational commitment in Cambodian public organization. Asia Pacific Management Review, 29(1), 44–52. https://doi.org/10.1016/j.apmrv.2023.06.003

Matos, T., Santos, W., Zdravevski, E., Coelho, P. J., Pires, I. M., & Madeira, F. (2025). A systematic review of artificial intelligence applications in education: Emerging trends and challenges. Decision Analytics Journal, 15, 100571. https://doi.org/10.1016/j.dajour.2025.100571

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. PLoS Medicine, 6(7), e1000097. https://doi.org/10.1371/journal.pmed.1000097

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. PLOS Medicine, 18(3), e1003583. https://doi.org/10.1371/journal.pmed.1003583

Panisoara, G., Lazar, I., Panisoara, I. O., Chirca, R., & Ursu, A. S. (2020). Motivation and continuance intention towards online instruction among teachers during the COVID-19 pandemic: The mediating effect of burnout and technostress. International Journal of Environmental Research and Public Health, 17(23), 8002. https://doi.org/10.3390/ijerph17238002

Rowell, M., & El-Banna, M. M. (2025). Recommendations on Effective Nursing

Leadership. Nurse Leader, 23(5), 102478. https://doi.org/10.1016/j.mnl.2025.102478
Sailer, M., Maier, R., Berger, S., Kastorff, T., & Stegmann, K. (2024). Learning activities in technology-enhanced learning: A systematic review of meta-analyses and second-order meta-analysis in higher education. Learning and Individual Differences, 112, 102446. https://doi.org/10.1016/j.lindif.2024.102446
Senge, P. M. (1990). The fifth discipline: The art and practice of the learning organization. Doubleday/Currency.
Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of Business Research, 104, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039
Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. British Journal of Management, 14(3), 207–222. https://doi.org/10.1111/1467-8551.00375
Vasel, H. (2025). Factors shaping the implementation of educational organizational change: An analysis of Lewin's model in the context of teaching innovations. Social Sciences & Humanities Open, 11, 101599. https://doi.org/10.1016/j.ssaho.2025.101599
Veli Korkmaz, A., Van Engen, M. L., Knappert, L., & Schalk, R. (2022). About and beyond leading uniqueness and belongingness: A systematic review of inclusive leadership research. Human Resource Management Review, 32(4), 100894. https://doi.org/10.1016/j.hrmr.2022.100894
Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. Journal of Planning Education and Research, 39(1), 93–112. https://doi.org/10.1177/0739456X17723971
Zhang, Y., Li, R., Pi, Z., & Yang, J. (2025). Active learning strategies in video learning: A meta-analysis. Educational Research Review, 48, 100708. https://doi.org/10.1016/j.edurev.2025.100708
Zhu, J., Zhi, W., & Fang, Y. (2025). Ethical leadership, organizational learning, and corporate ESG performance: A moderated mediation model. International Review of Economics & Finance, 98, 103966. https://doi.org/10.1016/j.iref.2025.103966