Navigating Dualities: A Literature Review of the Role of Organizational Learning in Fostering Ambidexterity

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Abstract: In the evolving landscape of organizational management, the simultaneous pursuit of exploitation and exploration has heightened interest in organizational ambidexterity. This literature review synthesizes key studies to explore the relationship between organizational learning and ambidexterity, focusing on how learning influences and integrates ambidextrous capabilities. The review examines the theoretical and practical importance of balancing these dual strategies, emphasizing their role in long-term success. To provide a structured analysis, the literature is organized into six key themes, offering a comprehensive view of how different aspects of learning contribute to ambidexterity. Methodologically, the review systematically analyzes peer-reviewed articles from the last two decades, offering insights into how learning processes enhance both explorative and exploitative activities. The findings underscore the value of embedding learning in cultural and structural dimensions to promote adaptability and innovation, providing significant implications for organizational leaders and scholars.

Keywords: Ambidexterity, Organizational Learning, Exploration, Exploitation, Innovation

1. Introduction

The growing interest in organizational ambidexterity (OA) is evidenced by the increasing number of academic publications and the recognition of OA as a critical factor for sustaining competitive advantage in dynamic business environments (O'Reilly and Tushman, 2013). The discourse on OA has become a cornerstone of organizational and management research (Raisch and Birkinshaw, 2008), with indications that the ability to balance exploitation and exploration activities may be essential for long-term corporate success (March, 1991). Recently, attention has intensified on how organizations can learn to support ambidexterity, integrating new knowledge while refining existing capabilities (Birkinshaw and Gibson, 2004). The key question in this context is how organizational learning processes can be designed to foster and sustain ambidexterity.

This growing interest necessitates a thorough evaluation of the approaches and concepts that underpin organizational learning in the context of ambidexterity. Consequently, significant scholarly effort has been directed towards identifying and developing frameworks, methodologies, and tools that facilitate the integration of learning and ambidextrous practices (e.g., (Andriopoulos and Lewis, 2009; Jasmand et al., 2012; Turner et al., 2013). These advancements underscore the importance of systematically reviewing and synthesizing the existing literature to understand the state of research and identify future directions. The objective of this paper is to provide a comprehensive overview of the current state of organizational learning in relation to ambidexterity, particularly focusing on practical implications for companies.

These are also relevant for the AmbiProd project, which focuses on the development of a software-based holistic production system (GPS) that embodies an ambidextrous approach. The project aims to create a production system that balances resource efficiency and adaptability throughout the value chain. Therefore, among other components a central focus is on the implementation of a *Learning Coaching Approach* that aim to promote organizational learning to foster and sustain ambidexterity. Identifying practical implications for companies can concretely support them in strengthening their ambidextrous capabilities. AmbiProd aims to ensure high stability in production while enabling a rapid response to global market turbulence.

Drawing on extensive literature from databases, this publication aims to provide a nuanced understanding of how organizations can harness these concepts to thrive during periods of change and disruption. By examining the concept of organizational learning in the context of ambidexterity and exploring the approaches and concepts that can be employed to foster ambidextrous capabilities, this paper addresses the following key question to elucidate the distinctive characteristics of ambidexterity and learning in organizations: *How does organisational learning influence and incorporate the development of ambidexterity in organizations?*

To answer this research question, the review is structured as follows: first, the methodology of this review is detailed. Subsequently, the literature on organizational learning and ambidexterity is then reviewed from multiple perspectives, and finally, the findings are summarized in the conclusion section.

2. Methodology

In this literature review, a multi-step methodology was employed to systematically examine relevant literature. Three databases—EBSCO, Scopus, and Springer—were queried using 14 search terms, including "organizational learning," "ambidexterity," and "knowledge management." Articles were selected based on their relevance to the research objectives and questions, with titles and abstracts screened for initial inclusion. Full-text reviews were conducted on articles that defined key terms, focused on specific research areas within the topic, or explored the relationship between organizational learning and ambidexterity. Only accessible texts directly addressing the research questions were included for detailed analysis.

A total of 1,325 potentially relevant texts were retrieved from EBSCO, Scopus, and Springer databases using 14 search terms. After removing duplicates and screening titles and abstracts, 287 articles remained relevant to the research objective. After reviewing accessibility and content, 58 texts were analyzed in detail, with 32 ultimately included in the paper. For the detailed thematic analysis of the selected texts, the research team conducted a systematic qualitative review. This method involves a structured approach to reviewing and synthesizing qualitative data focusing on identifying themes and patterns that address specific research questions. The process began with an initial comprehensive reading of each text, during which sections directly addressing the research questions were highlighted. This careful reading ensured that all relevant information was captured for further analysis.

After the highlighting process, the research team reviewed the highlighted sections of the relevant texts to identify common keywords related to organizational learning and ambidexterity. Keywords that shared similar patterns were grouped into potential themes. These themes were then reviewed and refined, and this process continued until no new themes emerged. During this process, we engaged in continual reflection and discussion until consensus was reached to ensure the themes represented the data.

To ensure the reliability of the thematic analysis, we conducted a process of validation. This involved cross-verification of themes and findings by a third researcher. Discrepancies were discussed and resolved to ensure the final themes represented the data. Each stage of the process was performed with transparency in an Excel file to ensure the validity and reliability of the findings. The data extraction and analysis process revealed six key topics in the literature which were central to research on organisational learning and ambidexterity and its impacts from a business perspective.

3. Results of the Literature Review: The Role of Organizational Learning in Fostering Ambidexterity

The increasing academic interest in organizational ambidexterity (OA) underscores its significance as a vital factor for sustaining competitive advantage in dynamic business environments (O'Reilly and Tushman, 2013). Central to achieving OA is the ability of organizations to effectively balance the exploration of new opportunities with the exploitation of existing capabilities (Birkinshaw and Gibson, 2004). The literature review results reveal six topics framing the research of organisational learning and ambidexterity from a management perspective. These topics are: 1) Individual Roles and Behaviours, 2) Learning Culture, 3) Leadership and Management Systems, 4) Technological and Infrastructural Learning Components, 5) Learning Processes and 6) Capability Development and Management.

3.1 Individual Roles and Behaviours

The research stream *individual learning behaviours* form the bedrock of organizational learning processes, playing a foundational role in the development of ambidexterity within organizations. Ambidexterity, the ability to balance exploration of new opportunities with the exploitation of existing capabilities, begins at the individual level. It is within the actions and decisions of individual employees that the dual processes of exploration and exploitation are first navigated, setting the stage for larger organizational outcomes.

Schnellbächer and Heidenreich (2020) provide insight into this dynamic by investigating the micro-foundations of individual ambidexterity and its influence on organizational performance, focusing on ambidextrous knowledge seeking and offering. Their empirical study, involving 415 employees, identifies these behaviours as

key mechanisms for enhancing departmental performance. Ambidextrous knowledge seeking (acquiring complementary and novel knowledge) improves processes and adapts to opportunities, while ambidextrous knowledge offering is effective in radical innovation environments. The study highlights the need to tailor ambidextrous knowledge behaviours to a department's innovation focus to optimize performance outcomes.

Expanding on the notion of individual learning behaviours, Nagayoshi and Nakamura (2020) investigate how organizational learning from failure can enhance ambidexterity, particularly balancing exploration and exploitation in a Japanese SME. Through quantitative analysis, they find that learning from failure significantly boosts exploitation more than exploration, but dynamic resource adjustment can positively impact both. The study underscores the strategic role of failure in driving innovation and sustaining competitive advantage. For SMEs, it highlights the importance of robust learning mechanisms to leverage past failures for future growth. This research offers practical insights into achieving ambidexterity through structured learning and dynamic resource management.

3.2 Learning Culture

The *learning culture* research stream examines the cultural dimensions within organizations that promote a learning environment supportive of ambidexterity. Organizational culture can generally be defined as a set of values, norms, standards and behavioural patterns that are commonly shared by the organization's members (Ouchi and Wilkins, 1985). This cultural framework is fostering ambidexterity because it creates an environment where exploration of new opportunities and the exploitation of existing capabilities can coexist and mutually reinforce each other.

Cegarra-Navarro et al. (2021) illustrate how a well-established learning culture enhances organizational performance within the banking sector. Their study, based on data from 215 employees across 142 branches, highlights how a learning culture supported by knowledge processes enables banks to balance exploration and exploitation, crucial for adapting to a dynamic environment. The authors find that a learning culture significantly influences employees' commitment to learning, which in turn enhances both explorative and exploitative knowledge processes. They show that employees' learning about potential new stakeholders and internal strategies, tools, and techniques directly correlates with improved bank performance. The study underscores the importance of an active pursuit of learning within the organization to adapt to rapid digitalization and changing customer needs.

Furthermore, Yang et al. (2015) emphasize the role of specific cultural attributes, such as collectivism, in amplifying the effects of a learning culture on ambidexterity. They investigate the interaction between collectivism, centralization, and ambidextrous innovation in high-tech firms in China. Their quantitative study, involving 102 firms, reveals that a collectivistic organizational culture promotes organizational citizenship behaviours (OCB) and reduces social loafing, thereby facilitating ambidextrous innovation. However, centralization weakens the positive effects of collectivism on ambidexterity. The study highlights the need for balancing discipline (conformity to organizational goals) and passion (innovation zeal) to achieve ambidexterity. Practitioners are advised to foster a collectivistic culture while minimizing centralization to enhance both explorative and exploitative innovation.

In addition to cultural attributes, HR practices can influence the institutionalisation of a learning culture that supports ambidexterity. Prieto and Pilar Pérez Santana (2012) examine the influence of high-involvement HR practices on ambidextrous learning and organizational performance in Spanish firms. The study integrates exploratory and exploitative learning with strategic HR management, emphasizing the creation of a social climate conducive to ambidexterity. High-involvement HR practices—categorized into ability-enhancing, motivation-enhancing, and opportunity-enhancing—are shown to foster a supportive social climate that balances innovation (exploration) and efficiency (exploitation). The findings highlight the critical role of HR in shaping a positive social climate, essential for achieving ambidextrous learning and enhancing firm performance. The study offers valuable insights for practitioners on leveraging HR practices to improve organizational outcomes.

3.3 Leadership and Management Systems

The *leadership and management systems* research stream examines how leadership roles and management practices within organizations promote organizational learning and ambidexterity. Research in this stream shows that rather than merely facilitating organizational learning, leaders act as architects, designing and cultivating learning environments that balance the competing demands of exploration and exploitation.

Da Souza and Takahashi (2019) illustrate this concept by providing a foundational understanding of how leadership influences the interplay between dynamic capabilities (DC), organizational learning (OL), and ambidexterity (OA) in a higher education institution in Brazil. Through a qualitative case study using interviews, documentary research, and observation, the study highlights how founders and managers shape DC activities, fostering a balance between exploration and exploitation. The research underscores the intertwined nature of DC, OL, and OA, emphasizing the role of sensemaking in these processes. Practical insights are offered for managing change and balancing innovation and efficiency in educational contexts.

In addition to leadership, specific management practices and systems influence the balance between exploration and exploitation. Avby (2022) examines how integrating improvement methods, specifically the plan-do-check-act (PDCA) cycle, with ambidextrous learning, can enhance innovation management. The study presents a framework that combines PDCA's structured process with the dynamic balance of exploration (new knowledge) and exploitation (existing knowledge) to overcome biases favouring exploitation. Avby emphasizes the role of strategic leadership in fostering an ambidextrous environment, where both explorative and exploitative phases are effectively managed. This approach, grounded in organizational learning, highlights the importance of leadership, culture, and collective learning in driving continuous innovation and improving organizational performance.

Moreover, Arantes and Lima Soares (2021) examine the interaction between organizational learning, ambidexterity, and management control systems (MCS) in Brazilian non-profit organizations (NPOs). Using survey data from 227 responses, their study reveals that while organizational learning fosters ambidexterity, MCS can inhibit this relationship by prioritizing short-term problem-solving over long-term innovation. The research highlights a tension between control and innovation, suggesting that poorly designed MCS can stifle the balance between exploration and exploitation. For practitioners, this study emphasizes the need to carefully design and implement management control systems that balance the need for control with the flexibility required for innovation, ensuring that such systems support rather than hinder the dual demands of exploration and exploitation essential for ambidexterity.

3.4 Technological and Infrastructural Learning Components

This stream investigates how advanced technologies and infrastructural elements support learning and facilitate ambidexterity. It delves into how technological infrastructure, such as Big Data Analytics and social technologies, can provide real-time insights, enhance decision-making processes, and create an environment conducive to both exploratory and exploitative learning.

Bøe-Lillegraven (2014) illustrates how Big Data Analytics facilitates adaptive learning, enabling organizations to continuously update their knowledge base and pivot between exploration of new opportunities and exploitation of existing capabilities. By providing real-time insights and feedback, BDA facilitates the dynamic balancing of exploration and exploitation. The study reviews empirical cases in the media industry, demonstrating how BDA supports adaptive decision-making and learning processes. This approach enables organizations to continuously update their knowledge base and adjust strategies accordingly, highlighting the critical role of technological infrastructure in supporting ambidextrous learning. The insights gained from BDA allow firms to identify trends and patterns that inform both innovative initiatives and efficiency improvements.

Similarly, Mardi et al. (2018) emphasize the role of social technologies in enhancing absorptive capacity, which is the organization’s ability to assimilate and apply new external knowledge. By enhancing both exploration and exploitation activities, social technology facilitates the dynamic balance necessary for ambidexterity. The study, conducted across various sectors in Indonesia, employs structural equation modeling (SEM) to analyze the data, revealing that social technology directly and indirectly (through rapid absorptive capacity) supports ambidexterity. This capacity enables organizations to swiftly assimilate and apply new external knowledge, fostering both innovation and efficiency. The research underscores the importance of strategically integrating social technology to support ambidextrous capabilities. However, the study finds that while social technology enhances collectivism-based collaboration, this does not directly lead to increased ambidexterity, suggesting the need for further exploration into mediating factors such as knowledge integration.

3.5 Learning Processes

This theme examines the processes through which organizations simultaneously support explorational and exploitational learning. The following research shows that organizations can design their learning processes to

ensure that they are conducive to both exploration—seeking out and experimenting with new knowledge—and exploitation—refining and utilizing existing knowledge.

Lee et al. (2013) offer a foundational perspective on the boundary conditions influencing ambidextrous learning processes in industrial firms across four countries. Their study identifies environmental dynamism and firm size as key factors moderating the impact of ambidextrous learning processes on performance. Through an analysis of 1740 firm-year observations, the authors demonstrate that ambidextrous learning significantly enhances firm performance, particularly in larger firms and dynamic environments. They argue that firms must balance exploratory and exploitative learning modes to maintain competitiveness. The study suggests that firms should tailor their learning strategies based on size and environmental dynamism to optimize performance outcomes.

Wei et al. (2014) further illustrate the importance of strategic flexibility in learning processes, particularly in the context of new product development (NPD). They differentiate between the "relative exploratory dimension" (balancing exploration and exploitation) and the "interactive dimension" (leveraging complementarities), showing that these dimensions distinctly impact NPD performance. The study highlights how dynamic resource management, particularly resource and coordination flexibility, enhances the effectiveness of ambidextrous learning processes. This research shifts the focus from static resource endowment to dynamic resource management, providing theoretical insights and practical implications for optimizing NPD outcomes in high-tech SMEs. They highlight the importance of both balancing and integrating exploratory and exploitative learning processes to achieve optimal NPD outcomes.

The concept of "dynamic learning processes" is central to this discussion, as it encapsulates the need for organizations to continuously adjust their learning approaches based on both external market conditions and internal capabilities. Tian et al. (2021) and Seidle (2019) provide insights into how organizations can adapt their learning processes dynamically. Tian et al. (2021) demonstrates that both exploitative and exploratory learning processes significantly enhance innovation, with ambidexterity yielding superior results. The research also highlights the amplifying role of openness, defined as a firm's engagement with external knowledge sources, in strengthening the positive effects of ambidexterity on innovation. The findings underscore the importance of balancing short-term efficiency with long-term adaptability and suggest that openness in the learning processes is crucial for maximizing innovation outcomes in SMEs.

Similarly, Seidle (2019) explores how distinct sequences of experiential and vicarious learning processes underpin exploratory and exploitative innovation in biopharmaceutical firms. Through 16 interviews, the study derives sequences emphasizing either experiential or vicarious learning, constructing a model that proposes structural differentiation and integration mechanisms to foster ambidexterity. The study identifies technological brokering as crucial for balancing exploration and exploitation, suggesting cross-industry brokerage for exploration and intra-industry brokerage for exploitation. The research provides insights into mobilizing internal and external knowledge to independently advance innovation projects, highlighting the importance of linking these efforts to achieve organizational ambidexterity.

Chen and Liu (2018) investigate how open innovation (OI) influences organizational ambidexterity, with a focus on the mediating role of organizational learning goal orientation (LGO). They argue that inbound OI (acquisition of external knowledge) and outbound OI (commercialization of internal knowledge) are critical to achieving ambidexterity, with LGO facilitating the integration of these knowledge processes. Their empirical analysis of 195 Chinese high-tech firms demonstrates that LGO mediates the positive impact of OI on ambidexterity, promoting continuous learning and adaptation. The study underscores the importance of fostering an open innovation culture and a learning-oriented environment to enhance ambidexterity and sustain competitive advantage.

Eriksson (2013) examines the challenges of balancing exploration and exploitation in project-based organizations (PBOs) within the construction industry. The study highlights that conventional structural and sequential separations of these activities at various organizational levels are insufficient, often leading to a focus on exploitation while neglecting exploration. Eriksson argues that the decentralized and project-focused nature of the construction industry limits effective knowledge transfer. To address this, the paper advocates for contextual ambidexterity, integrating exploration and exploitation through cooperative procurement procedures. This approach fosters both short-term efficiency and long-term innovation, enhancing project performance and innovation in PBOs.

Finally, Ceptureanu and Ceptureanu (2023) contribute by exploring the impact of learning ambidexterity on innovation within creative industries, emphasizing the mediating role of enabling formalisation. Analyzing data

from 379 Romanian firms, the study demonstrates that simultaneous engagement in exploratory and exploitative learning processes significantly enhances innovation. The authors argue that enabling formalisation, which provides structured yet flexible processes, facilitates the integration of new and existing knowledge, thereby fostering innovation. This research contributes to the ambidexterity literature by highlighting the complementary roles of exploratory and exploitative learning and underscores the importance of formalisation in supporting these processes to drive innovation.

3.6 Capability Development and Management

Capability Development and Management stream delves into how organizations develop and manage capabilities to sustain ambidexterity. Research in this stream shows that capability development and management are linked to organizational learning, as it is through continuous learning that organizations develop the dynamic capabilities necessary for ambidexterity.

Dhir and Dhir (2018) highlight that firms with strong learning capabilities are better equipped to leverage exploration for innovation while also optimizing exploitation for efficiency. Using a survey of managerial personnel, the study investigates how exploration and exploitation affect firm outcomes, with learning capability as a moderating factor. The findings reveal that both exploration and exploitation positively influence firm performance. However, the relationship between exploration and firm performance is not significantly moderated by learning capability. In contrast, learning capability significantly moderates the relationship between exploitation and firm performance, indicating that firms must effectively exploit opportunities using their learning capabilities to achieve better performance. For practitioners, the study suggests that managers should focus on developing both internal and external knowledge resources to enhance their firm's ambidexterity.

Cegarra-Navarro and Dewhurst (2007) provide further evidence of the centrality of learning to capability development by illustrating how ambidexterity in learning processes can directly enhance customer capital. Through a study of 269 Spanish SMEs in the optometry and telecommunications sectors, the authors employ structural equation modelling and present a conceptual framework that defines knowledge exploration as activities involving search, variation, risk-taking, experimentation, and innovation, while knowledge exploitation focuses on utilizing existing knowledge to improve processes and services. The framework illustrates how these dual processes, when balanced within an ambidexterity context, contribute to customer capital. Their findings highlight sector-specific impacts, with telecommunications firms exhibiting more advanced ambidexterity due to dynamic environments. This connection between learning and customer capital underscores the broader impact of learning on organizational success.

Sağlam and İyigün (2019) expand on this by exploring the mediating roles of intellectual capital and organizational ambidexterity in the relationship between learning organization approaches and entrepreneurial orientation across service and production sectors. Their study reveals that intellectual capital significantly mediates the impact of a learning organization on ambidexterity, with a stronger effect observed in the production sector. They introduce interactive ambidexterity (knowledge flow within organizations) and integrative ambidexterity (collaborative exploration across boundaries) as key concepts. Their findings highlight the necessity of integrative ambidexterity, where knowledge flows across organizational boundaries, facilitating collaborative exploration and exploitation.

4. Discussion

This literature review addresses the research question: *How does organizational learning influence and incorporate the development of ambidexterity in organizations?* Through the identification of six core themes—individual roles and behaviours, learning culture, leadership and management systems, technological infrastructure, learning processes, and capability development—it becomes clear that organizational learning is a foundational mechanism for fostering ambidexterity. These themes interact in complex ways to create a cohesive framework that enables organizations to balance exploration (innovation) and exploitation (efficiency), crucial for long-term success.

At the core of organizational ambidexterity lies individual learning behaviour, which forms the micro-foundation of larger organizational processes. The research by Schnellbächer and Heidenreich (2020) demonstrates that individual knowledge-seeking (exploration) and knowledge-sharing (exploitation) behaviours are critical to enhancing organizational performance. These behaviours lay the groundwork for organizational learning by

driving the dual processes of exploration and exploitation within departments and teams. However, the effectiveness of these individual actions is significantly influenced by the organizational context.

A strong learning culture amplifies the impact of individual learning behaviours on organizational ambidexterity. Cegarra-Navarro et al. (2021) emphasize that a learning-oriented culture not only enhances individual engagement in knowledge-seeking and sharing but also promotes a collective mindset that values both innovation and efficiency. In such environments, employees feel empowered to explore new opportunities without the fear of failure, knowing that the organizational culture supports learning from mistakes. This aligns with Nagayoshi and Nakamura's (2020) findings, which highlight how learning from failure boosts exploitative activities while still supporting exploratory efforts. The interaction between culture and individual behaviour is particularly important in fostering ambidextrous capabilities. Organizations with a collectivistic culture, as noted by Yang et al. (2015), foster behaviours that reduce social loafing and enhance organizational citizenship, which in turn drives ambidextrous innovation. Therefore, a learning culture serves as the connective tissue that binds individual behaviours to broader organizational outcomes, reinforcing the balance between exploration and exploitation.

Leadership and management systems also play a pivotal role in shaping the environments where ambidextrous learning can thrive. As Da Souza and Takahashi (2019) argue, leaders act as architects of learning environments, designing systems and processes that allow for both exploration and exploitation. Effective leadership is not just about facilitating learning but about actively cultivating the right balance of innovation and efficiency through strategic decisions that impact organizational culture, individual behaviours, and technological adoption. Leaders must navigate the inherent tension between exploration (which demands flexibility and risk-taking) and exploitation (which requires control and efficiency). This is where management systems become crucial. Avby (2022) highlights the importance of integrating structured management practices, like the Plan-Do-Check-Act (PDCA) cycle, to overcome biases that favour exploitation. Strategic leadership thus serves as a mediator, ensuring that the organization remains adaptable while maintaining operational stability. The effectiveness of leadership in fostering ambidexterity is also contingent on how well it interacts with other themes. Leadership is instrumental in shaping the culture described above, drives the adoption of technology, and defines the learning processes that support capability development.

Technological infrastructure, such as Big Data Analytics (BDA) and social technologies, acts as an enabler of ambidextrous learning by providing the tools that enhance both explorative and exploitative processes. Bøe-Lillegraven (2014) demonstrates how BDA allows organizations to make real-time, data-driven decisions that facilitate adaptive learning, enabling them to pivot between exploration and exploitation as market conditions change. Mardi et al. (2018) extend this understanding by showing that social technologies enhance absorptive capacity, which is critical for integrating external knowledge into organizational learning processes. These technologies support both exploratory and exploitative learning by enabling collaboration, knowledge sharing, and rapid assimilation of new insights. However, the effectiveness of these technologies is largely determined by the cultural and leadership structures in place. For instance, a strong learning culture encourages the use of such tools to foster innovation, while effective leadership ensures that technological adoption is aligned with strategic goals. Thus, technological infrastructure not only supports learning processes but also interacts with leadership and culture outlined before to reinforce the balance between exploration and exploitation.

Learning processes are the operational mechanisms through which organizations integrate exploration and exploitation. These processes, as illustrated by Lee et al. (2013), need to be flexible enough to adapt to environmental changes while structured enough to maintain efficiency. Organizations that strategically design their learning processes to accommodate both modes of learning are better equipped to maintain competitiveness in dynamic environments. Tian et al. (2021) highlight the importance of openness in learning processes—engagement with external knowledge sources strengthens the positive effects of ambidexterity on innovation. This underscores the importance of dynamic learning processes that continuously adjust based on market conditions and organizational needs. However, these processes do not operate in isolation. Leadership plays a crucial role in shaping these processes, while culture influences how they are perceived and executed at the individual level. Moreover, technological infrastructure enhances these processes by providing real-time insights that allow organizations to adjust their learning strategies dynamically. In this sense, learning processes act as a bridge, connecting leadership, culture, and technology to the organization’s capability development efforts.

Capability development, supported by continuous learning, is both an outcome of and a contributor to ambidexterity. As Dhir and Dhir (2018) note, organizations with strong learning capabilities are better positioned

to leverage both exploration for innovation and exploitation for operational efficiency. These capabilities are not static; they evolve as organizations learn and adapt to new challenges. Sağlam and İyigün (2019) emphasize the role of intellectual capital in sustaining ambidextrous capabilities, demonstrating that integrative ambidexterity—where knowledge flows across organizational boundaries—enhances both innovation and efficiency. This highlights the importance of capability development as a holistic process that incorporates individual learning behaviours, culture, leadership, technology, and learning processes. Ultimately, capability development serves as the integrative outcome of the interactions between the six themes. It reflects the organization's ability to continuously adapt and balance exploration and exploitation over time, ensuring sustained performance and long-term success.

5. Conclusion

In conclusion, organizational learning is fundamental to the development and sustainment of ambidexterity. By fostering appropriate behaviours, cultivating a supportive learning culture, leveraging effective leadership and management systems, and utilizing robust technological infrastructure, organizations can successfully balance exploration and exploitation.

To leverage organizational learning for developing ambidexterity, companies should consider the following practical implications:

1. Encourage individual employees to explore new ideas while utilizing existing skills.
2. Cultivate a learning culture that encourages sharing of knowledge and that promote teamwork to enhance innovation and efficiency. Foster a culture of learning from failures to enhance innovation and improve departmental performance.
3. Empower leaders to create learning environments that balance innovation and efficiency. Design management systems that support exploration while maintaining necessary controls, fostering adaptability and growth.
4. Invest in advanced technologies like Big Data Analytics and social tools to enhance real-time decision-making. Create an infrastructure that supports both innovation and efficiency for sustainable growth.
5. Design learning processes that balance exploration of new ideas with refinement of existing knowledge. Adapt strategies based on firm size and market dynamics to enhance innovation.
6. Prioritize capability development through continuous learning. Balance exploration of new ideas with effective use of existing knowledge to drive innovation and improve overall performance.

By adopting these strategies, companies can foster organizational learning as critical factor to ensure high stability in production while remaining agile in response to global market changes. It provides the necessary cognitive and behavioural foundations for balancing exploration and exploitation, while also moderating the effectiveness of ambidextrous strategies on organizational performance. The results of this paper are now being used in the AmbiProd project to develop and refine the *Learning Coaching Approach*. Part of this solution will be a collection of learning formats that reinforce aspects of the six key themes, allowing companies to filter and search for learning formats according to their specific needs.

Looking ahead, the relationship between organizational learning and ambidexterity will likely evolve as organizations face new challenges. The rise of remote and hybrid work models, for example, will reshape how knowledge is shared and how collaborative innovation occurs. These new forms of work may require organizations to rethink how they structure learning processes and foster a culture of exploration. Additionally, emerging technologies such as AI-driven decision-making will further blur the lines between exploration and exploitation, as organizations use real-time data to both innovate and optimize existing processes simultaneously.

While this review offers a comprehensive overview of the intersection between organizational learning and ambidexterity, it is not without limitations. The literature selection process, although systematic, may have inadvertently excluded relevant studies published outside the selected databases or in other languages. Additionally, the development of the key themes has been influenced by the subjective interpretation of the researchers, which may have shaped the categorization of the findings. Future research should investigate the role of organizational learning in diverse cultural contexts, explore the impact of emerging technologies, and conduct longitudinal studies to better understand the evolution of ambidexterity.

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