

RESEARCH ARTICLE

Impact of Organizational Learning on Organizational Sustainable Development

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ARTICLE INFO

Received: May 21, 2024

Accepted: June 20, 2024

Keywords

Organizational learning
Learning development
Organizational development
Cognitive learning
Sustainability

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ABSTRACT

Organizational Learning (OL) is a strategic approach that focuses on Organizational Sustainable Development (OSD), providing sustainable solutions to managerial problems, threats, and challenges. This paper, with a strong foundation in a mixed-methods qualitative approach, delves into the crucial linkage between OL and OSD. The study's robust methodology includes a Systematic Literature Review (SLR) to comprehensively understand the phenomenon, followed by a qualitative method with data triangulation to gain a deeper insight into the phenomenon of interest. Moreover, the study used structured interviews to collect data from 35 faculty members of higher education institutions. The faculty members were selected from engineering, biological, and social sciences. The study found that OL is a prerequisite for the OSD. The study proclaims that cognitive learning mainly focuses on internal learning development and sustainability, while behavioural and social learning responds to environmental demands, projects, threats, and opportunities. For instance, OL can lead to the development of new sustainable technologies or the implementation of more efficient processes. Moreover, OL significantly contributes to OSD. The research recommends that continuous learning is indispensable for organizational development. Otherwise, without continuous learning, organizations may struggle to adapt and survive in a rapidly changing environment.

INTRODUCTION

Sustainability, a term coined by Gro Harlem Brundtland in 1987, gained significant traction following its popularization at the 1992 United Nations Earth Summit (Pearce & Atkinson, 1998).

Brundtland's definition of sustainability, which is particularly relevant in the context of organizational development, emphasizes meeting the needs of the present without compromising the ability of future generations to meet their own needs. This notion

of sustainability, when applied to organizations, encompasses three interconnected pillars: social, economic, and environmental. However, the roots of sustainability in the organizational context can be traced back to the tensions between economists and behaviourists during World War II. During this period, economists focused on strategic responses to external threats, advocating for measures to address immediate challenges.

In contrast, behaviourists emphasize the internal development of organizations, focusing on building capacity and capability to withstand external pressures (Casey & Olivera, 2003). This contradiction highlights the multidimensional nature of sustainability, asserting that there is a need to address both internal and external factors to guarantee long-term practicality. In the context of an organization, sustainability faces various factors. For instance, small organizations may require support with internal instability, such as a lack of resources or high turnover, making it challenging to foster a culture of learning and innovation (Barbato & Turri, 2017). On the other hand, larger organizations with intricate hierarchical structures may need help with knowledge-sharing among staff due to bureaucratic and centralization processes (Geereddy, 2017). Similarly, ad-hoc-based organizations, which often rely on temporary staff or contractors, may need help attaining and retaining knowledge, leading to inadequacies and a lack of steadiness (Palos & Veres Stancovici, 2016; Ahmad et al., 2019).

These challenges underline the significance of Organizational Learning (OL) in raising sustainability. Organizational learning is the process through which organizations attain, disseminate, and employ knowledge to adjust to changing environments and achieve strategic objectives. Research shows that organizations with strong learning cultures are better prepared to respond to various external challenges and withstand long-term performance (Argote & Guo, 2016; Ullah et al., 2023). Studies have investigated the relationship between OL and Organizational Sustainable Development (OSD), emphasizing learning processes' significance in lashing sustainable outcomes (Bose & Khan, 2022; Yadav & Prakash, 2022). However, substantial gaps still need to be explored to understand how

organizational learning impacts sustainability within organizational contexts. One of the essential gaps lies in the limited sustainability investigation from the organizational learning perspective. Current research has mainly focused on sustainability's environmental and economic dimensions, avoiding the indispensable role of internal learning mechanisms in driving sustainable practices (Do et al., 2022).

Furthermore, discrepancies among various organizational departments further aggravate these gaps, obstructing the configuration of sustainability initiatives across the whole organizational continuum (Do et al., 2022). To investigate these gaps, the current study focuses on exploring the impact of organizational learning on enhancing sustainable organizational development. The study examines how organizational learning progressions contribute to sustainability outcomes and offers insights for implementation in varied organizational contexts.

The findings of this study are expected to contribute to both theory and practice. From a theoretical standpoint, the study aims to advance our understanding of the complex relationship between organizational learning and sustainable development, filling existing gaps in the literature. Practically, the insights garnered from this study can inform organizational leaders and policymakers on strategies to enhance sustainability efforts through targeted investments in organizational learning initiatives. Moreover, gaps are found in the theories and literature, and sustainability has yet to be researched from an organizational learning perspective. The lack of mutual consistency among the different departments added more to its severity (Do et al., 2022). Based on these gaps and recommendations, the focus of the current study was to assess the impact of OL on OSD. The study contributed to practice and knowledge by exploring the intricate relationship between OL and OSD. Based on gaps, recommendations, and context, the study focused on investigating the impact of organizational learning on enhancing sustainable organizational development and providing insights for practical implementation in diverse organizational contexts. So, the study sought to answer the question, 'How does organizational learning influence and contribute to organizational sustainable development?' This study

fills a significant gap in the literature by providing a comprehensive understanding of the role of organizational learning in sustainable organizational development.

RESEARCH METHODOLOGY

The study is based on a qualitative mixed-methods approach, which combines qualitative and quantitative data to provide a comprehensive understanding of the research topic. In the first phase, a comprehensive Systematic Literature Review (SLR) was conducted to comprehensively explore the phenomenon of interest. Six databases (Scopus, Science Direct, EBESCO, Google Scholar, PubMed, and Web of Sciences) were selected for the search for SLR. Moreover, the keywords 'organizational learning and organizational sustainable development' were used for the study. Additionally, the study adopted and

followed the following processes:

- The study adopted only English documents published in research journals, books, conference proceedings, and periodicals.
- The period was more comprehensive so that the phenomenon of interest could be fully comprehended.
- The study focused only on papers published in the social sciences.
- The time was made open so that comprehensive literature could be consulted and included in the paper.
- Both qualitative and quantitative studies were included.
- Newspapers, social media blogs, and other non-scientific materials were excluded from the study.

Furthermore, the PRISMA flow diagram in Figure 1 depicts the detailed process of inclusion and exclusion.

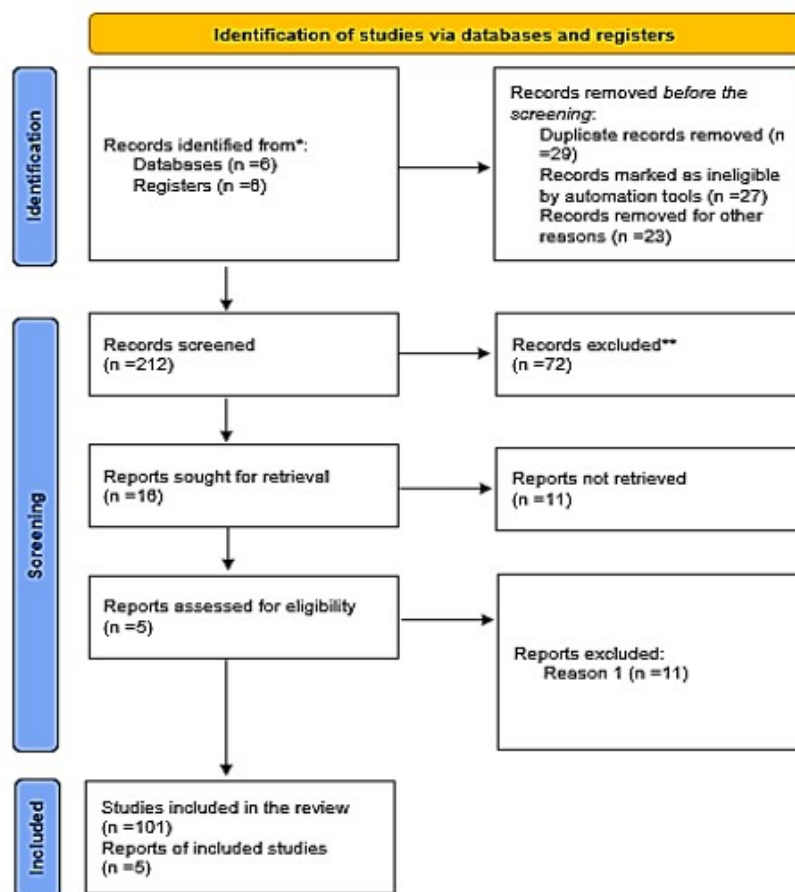


Figure 1: PRISMA flow diagram

In the second phase, detailed qualitative interviews were conducted with faculty members from higher education institutions. The faculty members were selected from engineering, biological, and social sciences. Moreover, both males and females were approached to get their consent regarding the role of OL in OSD. Approximately 50 faculty members were approached for the interview; however, the study conducted only 39, and the others were excused due to personal and professional reasons. In the second round, these interviews were again scanned and revisited, and four (4) needed to be completed and redundant and, therefore, were discarded in the compilation phase. In the third round, a thematic analysis of the interviews was compiled and shared among all interviewees to get a unified response. The study made minor modifications and suggestions, which were implemented in the study in the fourth round. This process took almost three months; however, it developed the rapport and confidence of both the interviewers and the interviewees to come to a unified stance. After this process, the data was reviewed for completion to ensure that all necessary information was included, and any redundancies, anomalies, duplications, and missing data were identified and addressed. After this process, 35 interviews were included in the data analysis.

The faculty members were approached and recruited based on snowball sampling, a method that ensures the selection of qualified respondents, thereby contributing to the collection of valid, authentic, and reliable data and information. The interviews in this research paper were conducted with utmost ethical considerations. Informed consent was obtained, ensuring confidentiality, and respecting participants' autonomy and privacy. Participants were fully informed about the study's purpose, their rights, and the voluntary nature of participation. Measures were also taken to mitigate any potential risks. The data was securely stored, and participants were assured that they could withdraw at any time without consequences, aligning with the principles of integrity, respect, and beneficence in research with human participants.

SYSTEMATIC LITERATURE REVIEW RESULTS AND DISCUSSION

The study came up with the following themes, for which related literature was reviewed comprehensively: The following are the procedures and protocol of the SLR: The major themes from organizational perspectives are mentioned in Table 1.

Table 1: Themes of the study

Major Theme	Theme	References
Philosophical Perspective of the Organizational Learning	Epistemological Perspective of Organizational Learning and Development	(Agarwal & Garg, 2012; Fang, Kim, & Milliken, 2014)
	Ontological Perspective of Organizational Learning and Development	(Barbato & Turri, 2017)
	Organizational Learning Based on Subjectivism	(Eryilmaz, 2016)
	Organizational Learning Based on Objectivism	(Hieronymi, 2013)
	Sociological Perspective of Organizational Learning	(Parker, 2019)
Theoretical Perspective of Organizational Learning	Cognitive Learning Theories	(Eraut & Hirsh, 2008)
	Behavioural Learning Theories	(Choo, 2016; Duckjung Shin, 2014)
	Social Learning Theories	(Canbaloglu et al., 2022; Pearce & Atkinson, 1998)

Organizational learning

OL is defined as a process through which an organization learns from experiences and exposures and plans new projects and processes. For instance,

this could involve a company analyzing the success and failures of past projects to inform future strategies. It is the process of accumulating, creating, storing, and sharing the knowledge, skills,

and experiences among the knowledge workers to boost their efficiency and effectiveness, which in turn will bolster organizational productivity and effectiveness (Eid Hamood & Thiruchelvam, 2023; Ahmed, 2008; Alhabeeb & Rowley, 2017; Aquilani et al., 2017). Organizational learning gives a warranty for sustainable development. In the context of this research, sustainable development refers to the practice of meeting the needs of the present without compromising the ability of future generations to meet their own needs. For example, a sustainable development initiative could involve a company implementing environmentally friendly practices to reduce its carbon footprint. From a sustainable perspective, OL can be defined as a cognitive, behavioural, and social process of organizational development, adding to its capacities and capabilities, sensing environmental threats and demands, responding accordingly, and gaining new insights for inventions and innovations (Alemanno, 2014).

All learning organizations that embrace the transformative power of continuous learning and adaptation can effectively respond to social, environmental, and psychological needs (Aftab et al., 2022; Alerasoul et al., 2022; Turi & Sorooshian, 2019). This transformative potential is crucial for the realization of a sustainable society (society 5.0), where continuous learning, supported by modern technology, is not just a slogan but a practical and necessary approach (Dean, 2016; Mai et al., 2022; Poquiz et al., 2023).

The formal debate regarding organizational learning and its role in sustainable development started during World War II when behaviourists and economists challenged each other's models encompassing the dimensions of organizational development. Behaviourists were focused more on internal strength development and innovations, while economists were focused on environmental changes, profit maximizations, and perfect information (Schulz, 2001; March & Simon, 1958; Pitelis, 2007; Devine, 1964). This led to the emergence of 'learning dilemmas' and 'ambiguities' in the organizational learning cycle. For instance, the adaptation (survival) theory, which demands environmental and organizational sustainability with greater severity, further inflamed

the dilemma and even developed tension between economists and behaviourists. Since economists focused on rational-based long-term development and organizational adjustment according to the wave of external situations, behaviourists strictly followed organizational procedures and welcomed internal ideas and innovations following limited rational policy (Gowdy, 2008; Dosi & Marengo, 2007). These learning dilemmas and ambiguities further affected sustainable organizational effectiveness and development.

1. Rigid bureaucratic policies can stifle individual learning, leading to 'role-constrained learning' (Schulz, 2001; Eraut & Hirsh, 2008; James G. March, 2006). However, it's essential to recognize that workers, as individuals, are the driving force behind organizational learning. When empowered to follow their own lines of action, engagement in entrepreneurial, non-routine tasks and innovation can flourish, leading to long-term sustainable individual and organizational development.

2. 'Superstitious learning' emerged due to conflicts among organizational and environmental responses. Since superstitious learning cannot be used for strategic decisions, management does not include it in organizational processes and transactions, which restrains organizational learning and development (Aftab et al., 2022).

3. Audience learning creates ambiguity among workers and organizational learning when individual solutions are not appreciated and supported by cultural inertia. It further halted corporate training needs and the presentation of unique ideas (Alalwan et al., 2016).

4. 'Learning under ambiguity,' also called probabilistic learning, takes whole organizations based on inaccurate, insufficient information with the wrong interpretation that may stop an organization's learning acquisition in the future (Schulz, 2001).

The first comprehensive and formal model for organizational learning and sustainable development was developed by Levinthal and March (1981), which focused on technology adaptation for performance improvement, organizational learning, and development (Alsabbagh & Khalil, 2016). However, ambiguities related to performance were felt due to the continually evolving nature of the

technologies (Barbato & Turri, 2017). This severity was significantly felt in the organization during the 21st century. The existence of virtual and complex structure, knowledge economy, technology disruption, and uncertainty in organizational size and structure, and these internal and external factors changed the learning style and phenomenon (Kwon et al., 2017; Seth & Lee, 2017).

Later, this tension was lessened by the firm's behavioural theory, presented by Cyert and March (1963), stating that organizations are adaptive systems that adopt, sustain themselves, and learn from internal and external environments to adjust between external shocks and internal operating procedures and demands. However, more focus was paid to internal autonomy instead of external driving factors for long-term survival (Gavetti et al., 2012; Organizations, 2010; DuckjungShin, 2014; Argote & Guo, 2016; Fang et al., 2014).

The scientific alternation models for sustainable learning and development presented by Limoges et al. (1994)—The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies—can also validate these arguments. The New Production of Knowledge (1994) was named mode-1 and mode-2, respectively. These models urge learning organizations to welcome local and tacit knowledge and open their doors to the community to participate in continuous, lifelong learning and development. Mode-1 was criticized for not encompassing local knowledge and only focusing on academic experiments and development, while Mode-2 proclaims that sustainable development is only possible by engaging all societal stakeholders (Alalwan et al., 2016; Ang & Joseph, 2011).

The public debate model presented by Andrews (1996) advocates for specialized learning and the active participation of all knowledge workers. This inclusive approach, where everyone is encouraged to share their experiences and ideas, is crucial for sustainable development (Appelbaum, 1997; Belle, 2016). Moreover, the co-production of knowledge model expands the opportunities for 'Contributive Expertise' (adding to the body of knowledge) and 'Interactional Expertise' (benefiting from experiences) for all stakeholders, emphasizing the importance of their active participation in

sustainable learning and development (Alemanno, 2014).

Organizational learning and organizational sustainable development

OL considered prerequisites for OSD. Continuous OL provides confidence to the organizational knowledge workers and promotes their skills, strength, and trust. Besides this, OL develops social, emotional, and psychological assets (Ahmed, 2008). Continuous OL promotes workers' convergence on different processes and projects, enabling workers to address the sustainability challenges in organizations. With time, sustainability is becoming a significant challenge; the Earth is becoming less hospitable. Therefore, knowledge workers in all organizations must promote specific models, methods, and techniques that can help optimize processes, operations, and projects (Sawyer & Jarrahi, 2013; Birmingham, 2015). This can be done by synchronizing the organization process with social and environmental needs, requirements, and expectations. These processes may need re-engineering, reverse engineering, and forward engineering of the organizational processes, linking them with lean management practices to minimize waste and increase the organization's throughput (Agarwal & Garg, 2012; Fang et al., 2014).

Society faces environmental sustainability issues, which may only be addressed with continuous learning support (Aljuaid et al., 2013). Organizational policymakers, top management, and even line managers are supposed to promote sustainability practices by "doing a better thing" or "doing the right things" to minimize waste and cost. Similarly, at the workers' level, the shift needs to be reflexive, system-wide, and resilient at both internal and external horizons (Belle, 2016).

Likewise, sustainability is based on five aspects. Indeterminacy means that sometimes it becomes difficult or impossible to know the best course of action in advance, and therefore, sustainability issues may arise (Fatima et al., 2023). However, this dialogue can be countered with continuous learning and exploration, which can even explore and exploit the "known-unknown" and "unknown-unknown" and can be better tackled with contingency, workarounds, and backup plans. Similarly, the second aspect of

sustainability is value-leadness. Research admits that learning organizations have achieved breakthroughs in providing customers and end users value-added deliverables (goods, services, systems, and results). Likewise, controversy can be tackled with dialogue and debate by presenting logic and super logic, which come from continuous learning (Eisenberg, 2016). In the same way, the fourth challenge of sustainability is uncertainty, which means a need for knowledge and awareness. However, continuous OL can better tackle uncertainty's probability, impact, and urgency (Eisenberg, 2016). Finally, the fifth challenge of sustainability is complexity; nevertheless, complex processes and projects can be re-planned and re-engineered, which decompose risk and complexity into small milestones, work packages, and activity levels. The above debate admits that the organization can better tackle all sustainability issues through OL. Therefore, we can proclaim that OL is the prerequisite of the OSD (Parker, 2019).

Philosophical perspective of organizational learning

Epistemological perspective of organizational learning and development: Epistemology concerns knowledge's source, precision, validity, and reliability (Ang & Joseph, 2011; Gavetti et al., 2012). Organizational epistemology roots can be found in Engstrom's expensive learning theory and Nonaka's theory of knowledge creation (Hartley, 2007; Joo, 2010). In epistemology, subjectivism and objectivism cover different aspects of knowledge creation and validation. Subjectivism believes organizational knowledge is created through symbolic interactionism, hermeneutics, postmodernism, and social constructionism. Subjectivism deals with organizations of different parts, ranks, groups, and layers proclaiming their active interaction and affiliation (Andrea & Fernando, 2003). It also avows the empowerment, stronger affiliation, and interaction of the knowledge workers in an organization to encourage pluralistic views, voices, and values to generate texts, narratives, dialogue, new skills, and knowledge development (Argote & Guo, 2016; Whitworth, 2009).

Ontological perspective of organizational learning and development: The ontological perspective for learning development is gaining recognition and popularity in

the semantic web due to its extensive use in internet-based applications (Alalwan et al., 2016; Aljuaid et al., 2013). They are used in developing a self-directive and meta-cognitive learning management system, paving the road for inclusive and strategic institutional development (Rani et al., 2016). It is branded with two central thoughts in Western philosophy, i.e., the view of being and the view of becoming. These views are further divided into subjectivism and objectivism. This perspective of 'being' and 'becoming' is understood to explore organizational-related analysis and discussion.

Organizational learning based on subjectivism: Subjectivism is process-oriented and deals with the science of becoming and transitory changes (Birmingham, 2015; Argote, 2012). According to Hatch (1997), symbolic-interpretive theory urges that individual, group, and organizational learning development is mainly based on participant observation, texts, narratives, and hermeneutics (Ahmed, 2008; Aljuaid et al., 2013). In this regard, organizational cultural notions, composed of values, norms, routines, and principles, work as a guiding standard for knowledge workers' interaction and affiliation (Whitworth, 2009; Argyris, 1976; Shahzad et al., 2022; Haloul et al., 2024).

Another aspect contributing to organizational learning development since the 1970s is the overwhelming increase in the organization's size and complications in communication among the organization's knowledge workers. These situations led to dis-equilibrium inside organizational units and frequent disagreement (Parker, 2019; Canbaloglu et al., 2022). Therefore, it was incumbent to sustain intrinsic stability under such circumstances, and the organizations were supposed to progressively develop principles of coordination and cooperation, which led to organizational learning effectiveness and development (Cartwright, 2002; Alalwan et al., 2016). However, these efforts only remained fruitful for a short time due to the rapid expansion of modern organizations' emergence in scale and complexity, which led to their sub-division into specialization and organizational professionalism. These practices forced organizations to invest more in functional areas and their integration, such as administration, marketing, and communication (Parker, 2019;

Hazen, 1993). At this point, integration and coordination raised unmanageable circumstances due to the large, complex structure of the organization. Therefore, postmodernist researchers suggested returning to the cores of organizational values, emphasizing better control and small-scale structure size (Whitworth, 2009; Chen, 2022). Similarly, culture- and postmodernism-based organizational learning call attention to the researcher's subjectivity and rely on texts, narratives, and dialogues for their content, contributing to the debates and discussions of pluralistic viewpoints. This trial-and-error mechanism added to organizational learning development, effectiveness, and repository (Dean, 2016; Alemanno, 2014).

Organizational learning based on objectivism: According to Western philosophy, objectivism originated from realism, which conveys the meaning and sense of the outside, a transcendental world that exists purely because of human consciousness (Alzahrani & Woollard, 2013; Birmingham, 2015). Keeping the objectivist constructs in mind, organization theory was built from a mechanistic perspective. According to this stance, organizations operate by receiving input from the external world through resources, processing them, and transforming them into products sent to other organizations. These processes ensure equilibrium and homeostasis, form precision in work design, define ways for procedural adaptation, develop the hierarchical structure of authority with precisely documented rules and flows, and normalize activities via monitoring, controlling, and evaluation processes (Choo, 2016). Consequently, organizations work as an open system, and closed system stances of the organization's theory become obsolete. These practices gradually transform and flourish the environment, give knowledge workers social, moral, and ethical empowerment, and focus on mutual respect (Bustinza et al., 2010).

This engagement of internal and external stakeholders forms a learning loop through continuous feedback, which generates diverse ideas and explores new learning horizons (Adcock, 2012; Bavarsad et al., 2014). Therefore, researchers state that to manipulate objective perceptions and convert resources efficiently and effectively into products, organizations should transform themselves and their

workers for organizational learning effectiveness and sustained development (Blackman & Henderson, 2013). This readiness of the organizations and their knowledge workers will convert organizations into learning organizations, which will help generate and develop new skills and knowledge and transform the organization's culture into learning, development, and effectiveness.

Sociological perspective of organizational learning

: Learning development needs a stimulating environment—a socially and emotionally charged environment—where ideas, knowledge, and experiences are transformed suitably (Bustinza et al., 2010; March & Simon, 1958). It is a fact that learning development is not possible in isolation, and it always needs the support of objects, places, the participation of groups, and other stimuli (Pitelis, 2007). According to constructivist thoughts, what is learned is deeply connected to the environment and the conditions in which it is learned (Whitworth, 2009; Choo, 2016). Similarly, pragmatism believes in developing a controlled learning environment at different levels (Seth & Lee, 2017). Therefore, learning and its development cannot be isolated from the context and environment. In a synchronized way, this stimulation builds the foundation for knowledge and learning development at the organizational level. The reflexivity theory supports the same concept, which proclaims that learning development needs consistency and repetition to be gathered better (Argote, 2012; Belle, 2016; Briz-Ponce et al., 2017). According to the reflexivity concept, critical analysis, rejection, and acceptance fuel organizational learning (Joo, 2010; Cheon et al., 2015).

Furthermore, The Co-production of the Knowledge Model invites scientists and local knowledge workers to share tacit and scientific knowledge, collaborate in 'Contributive Expertise,' add to the body of knowledge and further development, and 'Interactional Expertise,' which aims at skill development. Similarly, the critical theory of learning by doing and learning by interaction postulates that learning, development, and effectiveness can benefit knowledge workers in a defined structural environment (Carroll, 2012). Ang & Joseph (2011) and Seth & Lee (2017) indicate that organizational structure significantly affects learning development and effectiveness. The above premises,

thoughts, models, theories, and findings suggest that learning needs a synchronized, socially and

emotionally charged, and stimulating environment for development and effectiveness. A synthesis of the philosophical perspective is given in Table 2.

Table 2: Philosophical perspective of organizational learning

Perspective	Description
Epistemological Perspective	Concerned with knowledge source, validity, and reliability, emphasizing interaction among knowledge workers for pluralistic views and learning effectiveness.
Ontological Perspective	Explores 'being' and 'becoming', informing analyses with subjectivism and objectivism viewpoints for Organizational Learning.
Subjectivism	A process-oriented approach focusing on participant observation and organizational culture, fostering coordination and trial-and-error mechanisms for learning effectiveness.
Objectivism	Views organizations as open systems processing external inputs, with a mechanistic perspective driving continuous feedback loops and transformation for sustained development.
Sociological Perspective	Highlights the importance of a stimulating environment for learning, emphasizing collaborative knowledge sharing and structured environments to enhance learning effectiveness.

Theoretical perspective of organizational learning

Cognitive learning theories: Organizational cognition is concerned with the computational capacity of the organization. It concerns those processes that deal with decision-making, problem-solving, and acquiring new skills and knowledge for learning and development inside organizations (Alemanno, 2014). Organizational cognition may be called mental models', 'cognitive maps,' or 'collective memory,' and their main functions are to acquire, store, interpret, and disseminate knowledge and information for organizational performance and development (Belle, 2016; Briz-Ponce et al., 2017; Bustinza et al., 2010). Due to these features and the learning life cycle, Akgün et al. (2007) and Joo (2010) call organizations extended human beings.

With cognitive capacities, an organization forms the basis for information collection, scanning environmental demands and pressures and interpreting them in an organizational context. According to Choo (2016), the organization should develop systems that capture information and experiences, benchmark them, and store them for future learning and sustained development. According to Borelli et al. (2005), organizational learning (cognition) and experiences at the individual and organizational levels are transformed into solid knowledge during four stages ranging from concrete experiences, reflective observation, abstract conceptualization, and active experimentation. Experiential learning theory supports this typology

and recommends a mechanism to accommodate individual preferences and other operational and conceptual aspects of learning (Birmingham, 2015; Borrelli et al., 2005). Similarly, the Rational Calculation Model of Organizational Choice argues that learning from experiences forms organizational intelligence for environmental scanning and future responses accordingly (Aquilani et al., 2017; Cartwright, 2002; Sadouskaya, 2017).

Furthermore, in organizations, cognitive processes are supported by the social structure of the organization and technology orientation (Turi & Sorooshian, 2019; Alhabeeb & Rowley, 2017). Therefore, organizational scientists recommend the use of the latest technological tools like artificial intelligence, big data analytics, expert systems, and decision support systems to form artificial cognitive systems in organizations and speed up the process of learning development and its effectiveness (Alhabeeb & Rowley, 2017; Turi & Sorooshian, 2019). This stance is also supported by socio-cognitive theory, organization computation theory, and structuration theory to develop the memory system of the organization and its cognition, regularize its routines, and improve the learning capacity and processes of the organization (Wang & Ellinger, 2014; Sawyer & Jarrahi, 2013; Whitworth, 2009). Therefore, organizations should develop a learning system with the active collaboration of skilled knowledge workers and the latest technological tools to capture, acquire, scan, store, code, decode, and disseminate

information, experiences, and lessons learned for organizational learning and development.

Behavioural learning theories: The behavioural perspective of organizational learning rests on the assumption that learning is the acquisition of new observable behaviours and changes in previous behaviours based on environmental needs and pressures (Barbato & Turri, 2017; Schon, 1975). According to the rational calculation model, acquiring new behaviours is always based on rational choice and solid logic, which form the basis for new learning and effectiveness (Aljuaid et al., 2013; Whitworth, 2009). Moreover, favourable re-enforcement conditions and path-dependency theory postulate that individuals and organizations select the best stimuli (rational choice) among alternatives based on the expected outcomes, effectiveness, and efficiency (Argote & Guo, 2016). Likewise, the orientation of stimuli in different organizational settings and sizes adds more to organizational learning and development. This selection, being rational and calculated in nature, directly and indirectly, adds to the organizational repository and body of knowledge (Argote & Guo, 2016).

Behavioural aspects also value reward and punishment systems inside the organization, which promote feedback flow among knowledge workers and add to organizational capacities and capabilities (Barbato & Turri, 2017). Single, double, and deuterio learning is based on the feedback system inside the organization, which demands the change of existing procedures, layouts, routines, norms, and flows and the adaptation of the best deliverable ones for better performance (Akgün et al., 2003; Barbato & Turri, 2017).

Adaptation behaviour theory proclaims the adaptation of the environment, which will add to organizations' cognitive and behavioural domains (Alemanno, 2014; Sadouskaya, 2017; Aftab et al., 2022). As stated previously, single, double, and Deutero learning development are examples of adaptations from the environment after synchronized feedback. Cognitive learning development occurs at a higher level, and behavioural learning occurs at the middle and lower levels. These happenings give birth to learning networks at different layers and levels, further bolstering organizational learning

and performance (Bavarian et al., 2014; Briz-Ponce et al., 2017). All future behaviour selections using the stimulus-response model are based on associative and accommodative learning at lower levels. Knowledge workers see behaviour based on expected outcomes (Palos & Veres Stancovici, 2016; Kwon et al., 2017). Similarly, at a higher level, 'authentic mapping' of the organizational projects and plans is done, contributing to the organization's cognitive domain (Dosi & Marengo, 2007). These premises and phenomena are supported by stimulus-response patterns of behaviour theory, the Law of Effect, the Concept of Reinforcement, the Role of the Antecedent, Social Learning Theory, and Michenbaum's Model of Elf-Regulated Learning.

Social learning theories: There are many social learning theories, and their basic philosophy is that learning development needs stimuli, the environment, and the interaction of stimuli and the environment. The first theory in this regard is a sociotechnical theory stating that 'Instrumental learning' at the organizational level occurs due to the active interaction of technology and knowledge workers (Alalwan et al., 2016; Belle, 2016). Information technology (IT) orientation in organizations has changed the size, structure, learning, and working mechanisms. In different organizations, 'networked informative society' and social learning blogs' give birth to self-reflective learning' and 'dialogic learning,' which promote hegemony, peace, and harmony and lead to sustainable organizational learning and development (Bustinza et al., 2010; Adcock, 2012; Yang et al., 2022).

Similarly, structuration theory also pleads for the collaboration of the latest technological models, techniques, methods, and knowledge agents for effective organizational learning and development. It holds the same premise that IT penetration has added to the habits of organizational learning and has a suitable mechanism for information storage, retrieval, and sharing at the micro and macro levels (Daud & Kamsin, 2003; Alalwan et al., 2016). Moreover, relational learning theory believes that learning occurs inside the organization after information acquisition, storage, dissemination, and its best utilization (Adcock, 2012; Belle, 2016). Furthermore, experiential learning theory empowers

and encourages knowledge workers to practice new models, methods, and theories with different objects and stimuli for learning development (Cartwright, 2002; Comfort, 2013; Do et al., 2022). Not only this, but research findings also show that lounge discussions and tea-party gatherings generated organizationally acceptable practices and knowledge. All these theories and research findings postulate that learning needs a socially, morally, ethically, and psychologically charged environment (Comfort, 2013;

Hilden & Tikkamäki, 2013; Gavetti et al., 2012).

After summarizing the above debate, it is evident from the theoretical and philosophical perspectives that learning organizations should adopt continuous learning processes. Learning organizations must transform their processes, models, methods, and techniques by complementing the latest technological tools to optimize processes and re-engineer them to attain society 5.0. Table 3 gives a further comparison and synthesis of the theories.

Table 3: Synthesis and comparison of the theories

Theory	Description
Cognitive Learning Theories	Focus on organizational cognition and knowledge acquisition, employing terms like 'mental models' and 'cognitive maps' to describe information processing. Learning progresses through stages from concrete experiences to active experimentation, aided by tools like artificial intelligence.
Behavioural Learning Theories	I focused on observable behaviour change driven by environmental needs, with learning rationale reinforced by favourable conditions. Feedback mechanisms and reward systems shape organizational adaptation and performance, fostering learning networks.
Social Learning Theories	Emphasize the interaction between stimuli, the environment, and knowledge workers, facilitating instrumental and experiential Learning. Collaboration with technology enhances Learning, while socially and psychologically charged environments foster knowledge development.

QUALITATIVE DATA ANALYSIS AND DISCUSSION

Table 4 provides the demographics of the study. The demographics demonstrate the careful selection process of the respondents, ensuring a comprehensive and unbiased representation. The data was collected from both public (52%) and private universities

(48%), further enhancing the study's validity. All the respondents, regardless of gender, were qualified and deeply involved in organizational learning processes, instilling confidence in the study's findings. Their diverse educational backgrounds, qualifications, and rich experiences further bolstered the study's credibility and addressed potential bias.

Table 4: Demographics of the study

Items		Frequency	Percentage
Type of university	Public	21	60%
	Private	14	40%
Gender	Male	24	69%
	Female	11	31%
Qualification	BS	3	9%
	MS	7	20%
	PhD	25	71%
Job Experiences	1-10 years	8	23%
	10-20 years	6	17%
	20-30 years	21	60%
Faculty Details With group coding from (P1-P35) [P for Person]	Social Science (P1-P8)	8	22%
	Management Sciences (P9-P16)	8	23%
	Engineering Sciences (P17-P24)	8	23%
	Medical Sciences (P25-P35)	11	31%
	Total	35	100%

Qualitative data analysis of the interviews

In the social sciences, P1 and P2 emphasized, "Organizational learning is not just a process, but a transformative journey towards sustainable organizational development. It involves acquiring, sharing, and implementing knowledge to adapt to changing societal contexts. By learning from societal shifts and feedback, organizations can tailor their strategies and actions to align with social sustainability, promoting long-term relevance and positive community impact. This transformative power of organizational learning is what makes it so crucial in our fields."

Likewise, it was added in P3, P4, and P5 that "organizational learning is an essential means of sustainable organizational development. It necessitates engrossing knowledge and implementing that knowledge in adopting the fast-changing society and its needs and values. And such knowledge from societal trends helps foster organizations' strategies and practices to remain consistent with society and impact the community positively, thus supporting sustainability."

Similarly, P6 and P7 stated, "The role of organizational learning is paramount in sustainable development. It involves the capacity to attain, adopt, and implement knowledge to circumnavigate changing social settings. Learning from various social aspects, organizations can foster policies and practices that align with societies' values, nurturing endurance and contributing positively to social well-being."

In the same way, P8 added that "organizational learning plays a pivotal role in fostering sustainable development within organizations. It encompasses the attainment, elucidation, and application of that knowledge to adjust to the fast-changing environment, increase proficiency, and heighten long-term practicability. Past experiences help organizations make informed decisions, leading to minimizing resource waste and aligning their approaches and policies with social, economic, and ecological sustainability goals."

Participants from the management sciences, P9 and P10, highlighted, "Organizational learning is the basis of sustainable organizational development. It empowers them to ascertain and regulate inadequacies, reduce waste, and transform for

a greener future. Continuous learning nurtures adaptive competencies indispensable in a vibrant business environment and essential to making informed decisions that value organizations and the wider community."

Some participants (P11, P12, and P13) said, "Organizational learning is the cornerstone of sustainable development in organizations. It involves gaining insights, molding the changes in the market, and integrating liable business practices. With market subtleties and customer inclinations, organizations can cultivate strategies safeguarding economic, social, and environmental sustainability."

Similarly, P14, P15, and P16 asserted, "Organizational learning is a keystone of sustainable organizational development. It encompasses the attainment and application of knowledge to adapt to the changing demands of market and societal prospects. With such knowledge of market subtleties and customer behavior, organizations can adopt strategies that certify economic attainment and contribute to environmental and social sustainability."

From the engineering viewpoint, P17, P18, P19, and P20, "organizational learning plays a role as a catalyst for sustainable development in engineering enterprises. It endows organizations with advancements in manufacturing processes, energy efficacy, the enhancement of product design, and eco-friendly elucidations that lead to reduced adverse impacts on the environment. With such insights from achievements and failures, engineering firms can create products aligned with the goals of sustainable development and principles, eventually leading to a greener and more resilient future."

Furthermore, P21, P22, P23, and P24 stated, "Organizational learning is essential for sustainable development in engineering enterprises. It encompasses the evolution of engineering practices, materials, and technologies to reduce environmental impact. By learning from past projects and advances in sustainable engineering practices, organizations can design and manufacture products that align with sustainability goals, contributing to a greener future."

From the field of medical sciences, P25, P26, and P27 asserted, "Like other fields of life, organizational learning is as important for sustainable development in healthcare institutions. It encompasses

continuously enlightening patient care, clinical procedures, and the management of resources. With the data from the outcomes of patients, medical mistakes, and evolving research, healthcare organizations can improve healthcare quality, lessen costs, and contribute to community health, thus upholding sustainability."

The same P28, P29, P30, and P31 added, "Organizational learning is pivotal for sustainable development in healthcare. It implicates constant upgrading in patient care, medical measures, and the proper utilization of resources. Such outcomes from research and advances in medicine and treatment help healthcare organizations enhance healthcare services, decrease costs, and add to the well-being of the community on a long-term basis."

In the end, P32-P35 declared, "Organizational learning

is critical for sustainable development in healthcare institutions. It pertains to continuous improvements in patient care, medical procedures, and resource allocation. By learning from patient outcomes, medical research, and emerging treatments, healthcare organizations can enhance the quality of care, reduce costs, and contribute to the long-term well-being of patients and the community."

Triangulation of SLR and qualitative data

One promising study contribution from the interviews is the extraction of the respondents' OSD dimensions, which include aspects such as leadership, innovation, and adaptability, highlighted in the interviews. These are the themes and practices that the organization needs to adopt for OSD. For instance, one of the practices could be fostering a culture of continuous learning. The practices are given in Table 5.

Table 5: Recommendations of the practices an organization needs to do for the OSD

S. No	OSD Dimensions	Practices an organization needs to adopt
1	Acquiring Knowledge	Organizations must continuously seek out and acquire new knowledge, whether it is related to societal shifts, market dynamics, technological advances, or healthcare practices. This knowledge forms the foundation for adapting and improving their operations.
2.	Sharing Knowledge	Knowledge should not remain confined within an organization but should be shared across different departments and teams. This knowledge-sharing enables cross-functional Learning and ensures that insights are not confined to specific areas of the organization.
3.	Applying Knowledge	The knowledge acquired should be actively applied to adapt to changing circumstances. This means that organizations must take practical steps to implement the insights gained from their learning processes.
4.	Adaptation to Change	Organizational Learning is indispensable for coping to the need of changing society, new market demands, and technological advancements and changing environments. It fosters organizations keep pertinent by altering their strategies, and practices to get align with novel trends.
5.	Efficiency and Innovation	Learning helps in highlighting inefficiencies and regulating such inefficiencies, minimization of waste, and fostering of innovation. Efficient processes and innovative solutions contribute to economic viability and sustainability.
6	Environmental Responsibility	Learning from researches and past developments, advancements in technology, and sustainable practices is central for all of organizations in order to reduce their environmental impact. This is same vital in the field of engineering, where is essential to incorporate eco-friendly solutions and measures for minimising environmental impacts.
7	Quality Improvement	In healthcare, learning from patient outcomes, from the research and advances in medical, and in treatment, help healthcare organizations to enhance healthcare services, decrease costs, and add to the well-being of community on long-term basis."
8	Resource Management	Efficient resource management is critical to sustainable development in healthcare and other fields. Learning from medical research, and emerging treatments, healthcare organizations can enhance the quality of care, reduce costs, and contribute to the long-term well-being of patients and the community.
9	Incorporating Responsible Practices	Accountable business practices, such as social and environmental responsibility, are cohesive into an organization's approaches through learning from market subtleties, societal prospects, and customer preferences.
10.	Long-Term Relevance and Impact	Learning is crucial to guaranteeing organizations' long-term applicability and positive community impact, a central facet of sustainable organizational development.

DISCUSSION

The current study's findings, which highlighted the critical role of organizational learning in promoting sustainable development within organizations, align with the results of the study conducted by Agarwal & Garg (2012) and Argyris (1976). Likewise, social sciences underscore the prominence of organizational learning as a crucial appliance to adapt to the needs of society and align the procedure with social sustainability goals. Correspondingly, within the management sciences, organizational learning is essential to ascertaining inadequacies, reducing waste, and revolutionizing for a greener future, consistent with the findings of Appelbaum (1997) and Argote (2012 and Shahzad et al. (2022).

While previous studies have acknowledged the importance of organizational learning in driving sustainable development, this research study stands out for its comprehensive examination of the intricate relationship between organizational learning and sustainable development within diverse organizational contexts. This unique approach is consistent with the study conducted by Barbato and Turri (2017).

Moreover, this study takes a unique approach by integrating quantitative surveys with qualitative interviews, providing a holistic understanding of how organizational learning processes influence sustainability outcomes. This novel method offers valuable insights for practical implementation in organizational settings, as conducted by Seth and Lee (2017).

Moreover, this study addresses gaps identified in previous research, particularly regarding the limited exploration of sustainability from an organizational learning perspective. By examining the role of organizational learning in adapting to changing societal dynamics and aligning strategies with sustainability goals, this research study offers a nuanced understanding of the mechanisms through which organizational learning contributes to sustainable development (Bose & Khan, 2022).

Overall, the outcomes of this research study underscore the profound significance of organizational learning as a facilitator for sustainable development within organizations. By leveraging learning processes to adapt to evolving challenges and align

with sustainability objectives, organizations can enhance their resilience, efficiency, and long-term viability, ultimately contributing to positive social, economic, and environmental outcomes (Joo, 2010).

CONCLUSION AND RECOMMENDATIONS

Organizational learning is not just a catchphrase but a fundamental process that organizations must embrace wholeheartedly to reach the pinnacle of sustainable organizational development. This entails a continuous commitment to accumulating, creating, sharing, and applying knowledge, skills, and experiences. The historical context demonstrates that the debate on the role of OL in sustainable development has been ongoing for decades and continues to shape our understanding of how organizations must adapt to remain resilient. As organizations navigate the complexities of modern technology, they must remain flexible, agile, and responsive. The integration of technology, the removal of ambiguities, and the cultivation of a learning-rich environment are the pillars upon which sustainable development rests. Organizational learning is not an abstract concept but a practical, essential process that organizations must wholeheartedly embrace to navigate the complexities of the 21st century and beyond, ultimately leading them to the sustainable society of the future.

Limitations of this study, such as potential sample size constraints in the interviews, the risk of bias in participant responses, time constraints impacting the depth of analysis, and the specificity of findings to particular organizational contexts, are acknowledged. Future research could address these limitations by conducting longitudinal studies and comparative analyses across industries, integrating mixed-methods approaches more comprehensively, and designing intervention studies to test the effectiveness of organizational learning interventions in promoting sustainable development outcomes.

Implications of the study

The study makes significant theoretical contributions by comprehensively examining organizational learning from various perspectives, including cognitive, behavioural, social, philosophical (epistemological and ontological), and sociological. It offers insights into how cognitive processes,

technology orientation, rational choices, feedback systems, and adaptation behaviours are vital in shaping organizational learning and development. Moreover, it explores the significance of subjective and objective knowledge creation and validation, fostering an understanding of how organizational learning functions within different philosophical paradigms. From a practical standpoint, the study recommends optimizing and reengineering organizational processes, integrating lean management practices, and aligning with social and environmental requirements. It underscores the importance of leveraging information technology, such as artificial intelligence and big data analytics, to enhance organizational cognition.

Additionally, the study emphasizes creating socially and emotionally charged learning environments, promoting interactions among knowledge workers, and enabling knowledge sharing and collaboration. Ultimately, it positions learning as the driving force behind organizational development. It advocates for integrating continuous learning with the latest technological tools and techniques, aligning with the Society 5.0 concept to achieve sustainability and effectiveness.

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