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Research paper

Theoretical and Historical Prospective of Organizational Learning

Jamshid Ali Turi[1]*, Shahreyar Sorooshian[2], Fatimah Binti Muhmad[3], Yasir Javed[4]

[1,2,3]Faculty of Industrial Management, Universiti Malaysia Pahang, Malaysia
[4]Higher Colleges of Technology, Al Ain Woman Collage, UEA
**Corresponding author E-mail: Jamshidump@gmail.com*

Abstract

This article reviews and evaluates the concepts regarding the theoretical and historical prospective of the organizational learning. Drawing on established literature in the field of organizational learning, the authors analyze learning from three theoretical perspectives—cognitive, behavioral and social. They argue that how different internal and external phenomenon give birth to learning in organization and how the organization can benefit from them while utilizing them for the better management and productive engagement of the employees. The study concludes with some practical suggestions about how organizations can increase their ability to learn. It also describes different methods for learning and different measures.

Keywords: Organizational learning; Cognitive Learning; Behavioral learning; Social Learning

1. Introduction

Organizational learning is getting much popularity among researchers and organizational managers. All of them are exploring it from different aspects and respects to bitterly utilize it for competitive edge in the technology dominated globalized age. Cognitive, behavioral and social aspects of the organizational learning are recommended by different authors and researcher to be digging out for the better utilization of organizational resources. In this study philosophical and historical Prospective of the organizational learning has been presented with deeper understanding

2. Literature Review

2.1 Cognitive theories of organizational learning

Organizations are cognitive and learning entity, having memory and processing system and capabilities. Like human, they process information through their mental models, systems, methods and techniques [1][2]. Some theorists called them mental models [3][4] cognitive maps [5] collective memory, cognitive memories systems [6]. Mead, [7] for learning calls organizations as an "extended individuals", because organization follows natural life cycle of learning like individuals through mental mapping and modeling. Asserts individual as a building blocks of the organizations, their knowledge is made cohesive with organization through sharing their learning and experiences with management. Management assess, reshape and distribute the accumulated knowledge among workers [8], [9]. Moreover, researchers suggest that these cognitive maps form the basis of organizations' information processing mechanisms, enabling the organization to detect environmental events, opportunities and threats. Interpretation of this environmental data is a crucial stage occurring immediately before organizational learning and action [10]. Interpretations of environmental information are done in organizational references and context, because what is required is kept otherwise discarded [11], [12]. While Daft and Weick (1984) point to the need and necessity for organizations to develop and design their interpretation system, they are relatively reluctant to discard the cognitive perspective with its over-reliance on the scanning characteristics of organizations and on individuals as interpretation-processors [4], [13]. According to learning theorists not only information but experiences also leave greater impact on learning in organizations. These learning converts abstract ideas to practical experiences [14]. Kolb, [15] sates that learning takes place progressively, and moves from concrete experience to reflective observation, then abstract conceptualization, and finally active experimentation. This perspective suggests an active interconnection between cognition and action [16] . By developing learning typology based on individual preferences, Kim, [4] believes that experiential learning theory is the school of thought that best accommodates operational and conceptual aspects of learning, taking learning and experiences both into account. This argument has grounded their argument in the critique of the rational calculation model of organizational choice. They argue that learning from experience is a fundamental process of organizational intelligence, whereby environmental responses to organizational actions affect individual cognition and future preferences, which will then be used to choose between future alternatives [17],[18]. Computational cognitive theory takes and support all social, cognitive and behavioral factors for the learning development at individual and organizational level [19], [20]. The above arguments and theoretical discussion conclude that cognitive development play part in organizational learning and their major course of action are information processing capacity of the organization and practical experiences, which they experience during handling different threats and opportunities inside and outside the organizations [19]. Therefore, we can conclude that Organizational cognition is a discipline which contributes to improve the computational, compilation and learning capacity of

the organization along with its ability for knowledge management. The main agents of organizational cognition are the participants within the organization and the social networks which they form. In organizations, cognitive processes are supported by their goals, technology and social structure. Moreover, organizational cognition is also influenced by inter-organizational processes and with respect to environment. Therefore, the choice of the organization elements and thus organizational design plays a fundamental task in organizational cognition [21], [22]. Moreover, organizational cognition can also be as artificial system with the help of information system, which involves humans and machines. The cognitive abilities of organizations can be changed and improved through the process of information system. Therefore, organizational cognition is contingent upon the goals, social structure, participants, technology and the environment of the organization.

2.2 Behavioral Theories of Organizational Learning

Behavioral learning focuses on objectively observable behavior of the learning entity[23], [24]. This approach is use to understand learning rests on the assumption that learning is the acquisition of new behavior based on environmental conditions, organizational demands and strategies and the consequences of previous behavior, which ultimately, directly and indirectly improve their performance [20], [25].
This happens because of a learning process called conditioning, which is based on a stimulus triggering a response
[26]. Basically, behavioral conditioning is a simple feedback system. If a reward or reinforcement follows the response to a stimulus, then the response becomes more probable in the future. Some organizational learning theories mirror the stimulus-response patterns of behavior. For Weick (1991), "the defining property of learning is the combination of same stimulus and different response". Similarly, other researchers see organizational learning as involving adaptation to the environment. For them, organizational learning occurs when an organization, in response to "an external source of disturbance or shock", selects behaviors that lead the organization "to a preferred state" [15], [27].

Behaviors followed by aversive consequences are reduced (punishment), while behavior followed by positive consequences are increased (positive reinforcement), thus trying to make techniques more efficient [20], [28].

All single, Double-loop and Deutero learning are not independent from its consequences and all of them are triggered by stimulus, questioning and reasoning. All these consequences remain interconnected basing on the past behavior and, in this respect, learning is again stimulus induced. A very similar conceptualization of learning is offered by [13]. They indicate that two important dimensions of learning are cognitive development and behavior development. They link changes in the level of behavioral and cognitive development through social networking between the two determines. Their work perceives learning as an adaptation process and distinguish between lower-level and higher-level learning, the former being merely repetition of past behavior and behavioral adaptation to consequences of past behavior and involving association building between behavior and outcome [29]. This can also be described as path-dependency meaning that organizations base their future behavior on cumulative learning that worked in the past, which is like the idea of positive reinforcement in behavioral conditioning. Thus, lower-level learning represents associative learning based on the stimulus-response model. Higher-level learning, on the other hand, "is a more cognitive process than is lower-level learning" [13]. it includes questioning the consequences of behavior and seeking a more profound understanding of the causation of organizational processes. Higher-level learning enables the development of more complex patterns of association between cognition and behavior and is less constraining than lower-level learning, which includes the adjustment of specific behaviors driven by consequences and both internal and external demands

2.3 Social Theories of Learning

There are many social learning theories which conclude that major source of organizational learning is social interaction, environmental pressure and demands. Relational learning theory postulate that organizational learning is based on the concept of sharing, dissemination, distribution and negotiation taking place at micro-level, worker level [30]. Different research urges that promotion of learning activities should be the top priority to increase organizational efficiency and effectiveness. If organizational workers communicate and transform their personal indigenous (tacit) knowledge with co-workers, then it can be regarded as one of the best source that opponents cannot reproduce[31]. It is also seems natural because major source of learning in individual and organizational learning is the observation, which comes through social network sources [30]. Sharing of knowledge provide food for common intelligence, compel them to face uncertainties in complex business phenomenon, promote individual and organizational learning and make survival possible at individual and organizational level [31], [32]. Similarly, Experiential Learning Theory (ELT) states that learning takes place when learner is exposed to diverse processes and experiences which promote creation, innovation and transformation [33][34]. ELT cycle is composed of four stages i.e. concrete experience (CE), abstract conceptualization (AC) comprise the grasping component, while reflective observation (RO), and active experimentation (AE) make up the transforming experience component [15], [33].

These processes provide theoretical basis for organizational learning, learning by doing, work-based learning and problem and project based learning and become the part of organizational repository [27], [35]. Adaptive and Generative Learning Theory believes in the construction and development of the shared vision and intelligence at worker, team and organizational level[36].
Adaptive learning focuses based on the accommodation of new knowledge and generate new ideas, new strategies regarding cost, time, quality and scope and many other enabling factors demands for the generation of new ideas, and all these social, cognitive and behavioral factors forces to learn from all available resources in the surrounding[28], [37]. This theory was supported by James March (1991), who further extended this theory and identify two methods of organizational learning: 1) exploitation and 2) exploration to explore and exploit new ways and mental models for the active engagement of customer, by fulfilling their demands and expectations and learning or adopting new policies and strategies at organizational level [38]. Another widely recognized social learning theory is Assimilation Theory, which focus on the projects, activities and organizational experiences. It also focuses on knowledge acquisition, sharing and utilization. One recently developed, and widely recognized theory is the New Institutional Theory presented by John Meyer and colleagues such as Brian Rowan in 1977 and Richard Scott in 1983, and by Lynne Zucker in 1977. This theory postulates that with the passage of time, organizations react and adjust itself to internal and external demands and reflects changes in their cognitive, normative (Social and cultural) and regulatory (Behavioral) domains [39]. New-institutional theory also supports 4I framework arguments for organizational learning, where the learning process get starts from the individual ang later get institutionalized in the organizational repository [9], [40]. Socio-technical systems theory was first coined by Avistock Institute of Human Relations in England in 1950s to decrees the damages of the World War Second and to increase the effectiveness and cohesiveness among different parts of the organizations. The basic premise and philosophy of this concept is that any work, enterprise and organization is the combination of both social and technical (soft and hard) components and they are open to environment and both effects each other in a bidirectional way [41].
The early approach of the concept was to harmonized job and open new windows of learning and opportunities for learning to move organization to new horizons[42]. It is based on the interaction of two sub-system of the organization i.e. social structure and

the technology [31]. The collaboration of social structure and information system give birth to certain successful fields and products like Human Computer Interaction (HCI), Reengineering, R&D projects and Software Engineering. Institutional concept and theory also argues for changes in organizational structure with the support of latest technologies like information system. Similarly, structuration theory plea that organizational structure changes with the advent of new technologies, otherwise their existence remain at stick [42], [43]. This theory acceptance was also supported by Contingency theory, which assess technical rationality and efficiency [44], [45]. It defines the best possible, optimal, economical, technical and feasible way to cope the uncertain situation by building moral, confidence and competency of the workers [14], [32], [46].

2.4. Historical Prospective of the organizational learning

2.4.1. Argyris and Schon

Argyris and Schon have tied the concept of organizational learning to Dewey's (1933/1960) conception of inquiry in which thought, and action are viewed as intertwined to move from a state of doubt or confusion to a resolution of doubt. Two of Argyris and Schon's most influential ideas are those of theories-of-action/theories-in-use and single- and double-loop learning [47]. According to these theories, action are the routines and practices that embody knowledge link actions, outcomes, strategies and the assumptions for learning [48], [49].

These Theories of action take two distinct forms. Espoused theories of action explain or justify a pattern of activity or a way of doing things and theories-in-use implicit the way things are done. They also form models for sharing assumptions and cognitive maps among organizational members [48], [50]. These changes refine single-loop learning through questioning underlying assumptions, norms, or strategies, which further give birth to double-loop learning [4], [51]. Because single-loop learning occurs within the prevailing organizational frame of references, concerned primarily with effectiveness and efficiency [24]. Double-loop learning changes organizational frames of reference [51]. It resolves incompatible organizational norms by setting new priorities and weightings of norms, or by restructuring the norms themselves together with associated strategies and assumptions [21], [48].

2.4.2. Daft and Weick

The second view of organizations as interpretation systems highlights the idea that organizational members try to interpret what they have done, defined learned, and solved. Organizations don't have mechanisms separate from individuals to set goals, process information, or perceive the environment; therefore, it has to be with the collaboration of human forces [48]. A distinctive feature of organizational interpretation is the sharing of data, perceptions, and puzzling developments that allows groups to converge on an approximate interpretation[28]. Reaching convergence among organizational members enables organizations to interpret as a system. The data collected in scanning the environment are interpreted by the organization in a way by building shared understandings and the organization's learning is represented through a new action or response based upon this interpretation. The actions taken in the learning stage serve as feedback to the earlier stages, providing new data for interpretation. Organizational interpretation is the process through which information is given meaning and actions which are the chosen processes of learning [1].

2.4.3. Fiol and Lyles

Fiol and Lyles [13] state that major theorists generally agree that although individual learning is important to organizations, but organizational learning is not simply the sum of each member's learning. It includes so many unseen elements like values, norms, wishes and flows. Fiol and Lyles [13] postulate that Social and Behavioral changes concern actual responses, structures and/or actions. Cognitive change, by contrast, concerns new and shared understandings or "conceptual maps" of organizational members.

Based upon these changes, Fiol and Lyles[13] proposed a distinction between organizational adaptation and organizational learning. Organizational adaptation involves behavioral and social changes separate from cognitive changes; that is, "the ability to make incremental adjustments because of environmental, goal, policy, or other changes" [52]. This concept is like the concept of single-loop learning. Organizational learning, on the other hand, involves not only behavioral changes but also cognitive changes new insights, understandings, cognitive maps, and associations between past actions, their effectiveness (in terms of desired outcomes) and future actions. This concept is associated with higher-level learning and double-loop learning.

2.4.4. Levitt and March

Levitt and March (1988) states in their analysis of organizational learning placed greater emphasis on routinized behaviors than on organizational inquiry and interpretation. They described organizational learning as routine-based, history-dependent, and target-oriented. Routines, broadly defined, include the rules, practices, procedures, conventions, structure, belief system, framework, paradigm, culture and strategies through which organizations operate [4]. Over time, routines are transmitted among organizational members through a variety of means including socialization, education, professionalization, imitation, and personnel movement. Routines may be based on the organization's direct experience (e.g., history) or be imported from other organizations

Organizational interpretation is a challenging task because it involves making difficult judgments about cause and effect based on limited information within a highly complex system. They thus downplayed organizational interpretation, cautioning that it can be tainted by the ambiguity of success and/or by the organization's frames of reference that limit how history is seen and interpreted. Success itself can be a barrier to organizational learning because successful organizations may fall into "complacency traps" where they rely almost solely on the lessons of past achievements to guide future action [28]. Different researchers captured this phenomenon in examining change processes in educational system. He observed that in most educational-change processes, there is an "implementation dip" when things get worse before they get better. Almost anyone who has switched from using a typewriter to a computer can attest to this. They are likely to maintain that a temporary loss of competence and/or comfort was, at least initially, a barrier to change [12], [33].

Finally, Levitt and March (1988) caution that superstitious learning can occur when incorrect interpretations about the connections between actions and outcomes persist in their association [8]. In education, for example, the student body of a charter University might have grown substantially ever since the University started offering an after-University sports program. Therefore, the faculty might assume that the sports program is vital to the University's growth and must be continued or expanded despite its cost and inconvenience. The sports program may not have attracted many new students. The growth may result from marketing conducted in conjunction with the program and/or to word-of-mouth referrals from satisfied parents as the University became more established. To the students and parents choosing the charter University, the sports program may be a desirable but nonessential component whereas the faculty superstitiously connects it with continuing University growth and vitality [13].

2.5 Merging the Perspectives

In considering the different views of organizational learning highlighted above, several important points of agreement emerged among the different perspectives. There is considerable agreement among the above-mentioned theorists that organizational

learning involves multilevel learning (individual, group, organization). Moreover, it requires inquiry, shared understandings which implies behavioural and/or cognitive change and this fact can also be seen in the findings of the given researchers [17]. However, small differences can be seen in the postulation of these authors, as some argue it to be adoptive process and some name it as reactive process [22], [37]. Although there is considerable debate whether organizational learning is adaptive behaviour or whether lessons learned are embodied in shared cognitive maps that guide behaviour, many theorists agree that there is a difference between learning involving behavioural and cognitive change [26], [42].

2.6 Learning as cognitive, social and behavioral agent

From the synthesis given above, it can be easily concluded that organizational learning involves behavioral, social and cognitive changes. Single, double and Detour learning comes through social interaction, behavioral changes and cognitive exchange [13]. In educational setting, with single-loop learning, faculty might have students locate information from the computers in place of using encyclopedias or other classroom resources. The behavior has changed but the underlying way of teaching and learning due to the incorporation of Internet and computer in teaching-learning processes. With double-loop learning, faculty could decide to rethink the use of computers, perhaps using them to re-examine and alter instruction. For example, entirely new skills such as problem definition and problem solving might be emphasized [36] A Primer on Organizational Learning, 2009[30].
Similarly, with single-loop learning, employees might add a web page that serves the same purpose as a written brochure. With double-loop learning, employees might use the Internet to change the way they sell a product much in the way that Amazon.com has used the Internet to rethink ways of selling books [39]. Taken together, the work of these four pairs of theorists suggests that both individual learning and habits of inquiry are necessary but not sufficient conditions for organizational learning. Organizational learning arises through on-going shared interpretation of data, perceptions, puzzling events, assumptions, and cognitive maps among organizational members. Organizational adaptation [13] or single-loop learning occurs when an organization's existing frames of reference limit interpretation [33] and tends to result in behavioral change without cognitive change. Organizational learning (double-loop learning) involves behavioral changes as well as cognitive changes [13] in the shared understandings and underlying frames of reference guiding organizational behavior [9].

Application of the Organizational learning to the Research Study Organizational learning in educational system or university systems does not occur in a vacuum. Their organizational behavior is deeply influenced by the environment, community, and shifting parade of stakeholders [41] Learning, inquiry, and the examination of shared assumptions extend beyond university walls or district boundaries. According to a natural system perspective on organizations, Educational system is collectivizing whose participants are pursuing multiple interests, both disparate and common, but recognize the value of perpetuating the organization as an important resource [31] Carroll, 2012). In accordance with Scott[30] (1998), educational system attempt to adapt and survive in a turbulent environment. To survive and flourish, Educational system may constantly change or modify their formal goals[42].
Further, an open-system view of educational system as organizations suggests that educational system have reciprocal ties that bind and relate the organization with those elements that surround and penetrate it [48], [52]. The open-system view of organizations suggests, among other things, that educational system is not sealed off from their environments. This environment includes the local community, other institutions e.g., higher education and society at large. "The environment is perceived to be the ultimate source of materials, energy, and information, all of which are vital to the continuation of the system [42], [43]. As such, educational system is complex, dynamic organizations vulnerable to public demands, support, evaluation, and criticisms [49].
This perspective takes the position that renewal harmonizes continuity and change at the level of the enterprise. Renewal requires that organizations explore and learn new ways while concurrently exploiting what they have already learned[44][45]. Healthy learning organizations, for example, conserve the organization by encouraging enough innovation to stay vibrant and productive, but seek enough continuity to avoid overwhelming individuals with constant change and upheaval [49].

3. Conclusion and Recommendations

In this article, the author tried to explain the theoretical prospective for organizational learning. At times, this may seem like defending the indefensible, so we have also tried to acknowledge both sides of the argument. Nevertheless, we believe there are aspects of learning that have real strategic relevance to the competitiveness of companies, and hence, we have focused on some of the practical consequences of learning and provided some guidance on how to facilitate organizational learning. There is also a potential academic research agenda here, both to explore the nature of learning itself and to see whether insights into learning can strengthen our understanding of organizational learning processes. Our discussion reveals some dimensions of learning in general and some effects on practices and impact of learning; however, much work still needs to be done to understand organizational learning and its benefits and consequences. There is a need for research into the tension between remembering and retrieving knowledge on one hand and forgetting or losing past knowledge on the other. We know firms do utilize some structural mechanisms for remembering, such as meetings to share and discuss issues. But little research has addressed the extent to which

Organizations have practices that allow them to discriminate among valuable past experiences and those that should be learnt and in what circumstances. At a more strategic level, our discussion suggests many questions for future research: 1. What is the theoretical contribution of "learning" to the knowledge-based theory of the firm and to the practice of organizational learning?
2. How can we describe the different methods for learning and different measures? 3. The strategic management literature demonstrates the importance of organizational learning on firm performance.

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[1] M. Göhlich, "Theories of Organizational Learning as resources of Organizational Education," in *Organisation und Theorie*, Wiesbaden: Springer Fachmedien Wiesbaden, 2016, pp. 11–21.
[2] C. G.-H. of Cliometrics and undefined 2014, "Human capital," *Springer*.
[3] P. Sengupta, J. S. Kinnebrew, S. Basu, G. Biswas, and D. Clark, "Integrating computational thinking with K-12 science education using agent-based computation: A theoretical framework," *Educ. Inf. Technol.*, vol. 18, no. 2, pp. 351–380, Jun. 2013.
[4] D. K.-T. strategic management of intellectual capital and undefined 1997, "The link between individual and organizational learning," *Elsevier*.
[5] S. A.-C. & Organisation and undefined 2014, " Risques organisationnels et anticipation," *cairn.info*.
[6] F. Borrelli, C. Ponsiglione, … L. I.-J. of A., and undefined 2005, "Inter-organizational learning and collective memory in small firms clusters: An agent-based approach," *jasss.soc.surrey.ac.uk*.

[7] A. Mead, “Identity and sentient emotions at work,” 2014.
[8] S. Hilden, K. T.-A. sciences, and undefined 2013, “Reflective practice as a fuel for organizational learning,” *mdpi.com*.
[9] E. W.-P. of OLKC and undefined 2007, “The institutionalization of organizational learning: A neoinstitutional perspective,” *pdfs.semanticscholar.org*.
[10] R. Huang, “Organizational Learning: The Path to Growth,” 2016.
[11] R. Ford, “Organizational learning, change and power: toward a practice-theory framework,” *Learn. Organ.*, vol. 13, no. 5, pp. 495–524, Sep. 2006.
[12] A. Alhabeeb and J. Rowley, “Critical success factors for eLearning in Saudi Arabian universities,” *Int. J. Educ. Manag.*, vol. 31, no. 2, pp. 131–147, Mar. 2017.
[13] C. M. Fiol and M. A. Lyles, “Organizational Learning,” *Acad. Manag. Rev.*, vol. 10, no. 4, pp. 803–813, Oct. 1985.
[14] S. Agarwal, A. G.-J. of B. and Management, and undefined 2012, “The importance of communication within organizations: A research on two hotels in Uttarakhand,” *academia.edu*.
[15] A. Kolb, D. K.-T. S. handbook of management, and undefined 2009, “Experiential learning theory: A dynamic, holistic approach to management learning, education and development,” *books.google.com*.
[16] J. Caple and P. Martin, “Reflections of Two Pragmatists,” *Ind. Commer. Train.*, vol. 26, no. 1, pp. 16–20, Feb. 1994.
[17] M. Wang, Z. Wang, X. Gong, and Z. Guo, “The intensification technologies to water electrolysis for hydrogen production - A review,” *Renew. Sustain. Energy Rev.*, vol. 29, pp. 573–588, 2014.
[18] S. Skuncikiene, R. Balvociute, S. B.-S. tyrimai/Social, and undefined 2009, “Exploring characteristics of a learning organization as learning environment,” *new.su.lt*.
[19] R. S.-C. handbook of computational and undefined 2008, “Introduction to computational cognitive modeling,” *pdfs.semanticscholar.org*.
[20] A. E. Akgün, G. S. Lynn, and J. C. Byrne, “Organizational Learning: A Socio-Cognitive Framework,” *Hum. Relations*, vol. 56, no. 7, pp. 839–868, Jul. 2003.
[21] M. Eraut and W. Hirsh, *The significance of workplace learning for individuals, groups and organisations*. 2010.
[22] K. Apostolou, “Role of organisational learning in maintaining a stable context for transformation: the case of a Scottish SME,” 2014.
[23] C. Choo, *The inquiring organization: How organizations acquire knowledge and seek information*. 2016.
[24] G. Dosi and L. Marengo, “Perspective—On the Evolutionary and Behavioral Theories of Organizations: A Tentative Roadmap,” *Organ. Sci.*, vol. 18, no. 3, pp. 491–502, Jun. 2007.
[25] A. Alalwan, Y. Dwivedi, … N. R.-J. of E., and undefined 2016, “Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy,” *emeraldinsight.com*.
[26] B. G.-K. Acquisition and undefined 1989, “Social and cognitive processes in knowledge acquisition,” *tajrobe.net*.
[27] D. E.-U. R. L. Rev. and undefined 2015, “The Restorative Workplace: An Organizational Learning Approach to Discrimination,” *HeinOnline*.
[28] S. D. Aponte, D. C. Z.-E. Gerenciales, and undefined 2013, “A model of organizational learning in practice,” *scielo.org.co*.
[29] A. Hieronymi, “Understanding Systems Science: A Visual and Integrative Approach,” *Syst. Res. Behav. Sci.*, vol. 30, no. 5, pp. 580–595, Sep. 2013.
[30] B. S.-I. R. Program and undefined 2011, “Organizational learning: a literature review,” *irc.queensu.ca*.
[31] O. Bustinza, … L. M.-A. J. of, and undefined 2010, “Organizational learning and performance: Relationship between the dynamic and the operational capabilities of the firm,” *academicjournals.org*.
[32] N. Beauregard, L. Lemyre, J. B.- Societies, and undefined 2015, “The domains of organizational learning practices: An agency-structure perspective,” *mdpi.com*.
[33] C. L.-O. Submission and undefined 2011, “A Comparative Analysis of Three Unique Theories of Organizational Learning.,” *ERIC*.
[34] P. E. Bierly, E. H. Kessler, and E. W. Christensen, “Organizational learning, knowledge and wisdom,” *J. Organ. Chang. Manag.*, vol. 13, no. 6, pp. 595–618, Dec. 2000.
[35] J. Henri, “Performance measurement and organizational effectiveness: bridging the gap,” *Manag. Financ.*, vol. 30, no. 6, pp. 93–123, Jun. 2004.
[36] R. Chiva, J. H.-J. of M. & Organization, and undefined 2015, “A framework for organizational learning: zero, adaptive and generative learning,” *cambridge.org*.
[37] S. L. Bloom, “Organizational Stress and Trauma-Informed Services,” in *A Public Health Perspective of Women’s Mental Health*, New York, NY: Springer New York, 2010, pp. 295–311.
[38] B. Kump, J. Moskaliuk, U. Cress, and J. Kimmerle, “Cognitive foundations of organizational learning: re-introducing the distinction between declarative and non-declarative knowledge,” *Front. Psychol.*, vol. 6, Sep. 2015.
[39] R. E. Meyer and M. A. Höllerer, “Does Institutional Theory Need Redirecting?,” *J. Manag. Stud.*, p. n/a-n/a, Jul. 2014.
[40] H. V.-I. O. J. of E. Sciences and undefined 2010, “Organizational Learning in the Higher Education Institutions (A Case Study of Agricultural and Natural Recourses Campus of University of Tehran).,” *acarindex.com*.
[41] S. H. Appelbaum, “Socio-technical systems theory: an intervention strategy for organizational development,” *Manag. Decis.*, vol. 35, no. 6, pp. 452–463, Aug. 1997.
[42] S. Sawyer and M. Jarrahi, “Sociotechnical Approaches to the Study of Information Systems.,” 2014.
[43] B. W.-E. of I. S. and Technology and undefined 2009, “A brief introduction to sociotechnical systems,” *igi-global.com*.
[44] N. A.-J. of O. Behavior and undefined 2016, “Why we need theory in the organization sciences,” *Wiley Online Libr*.
[45] D. Blackman, S. H.-E. J. of Radical, and undefined 2001, “Does a learning organisation facilitate knowledge acquisition and transfer,” *mngt.waikato.ac.nz*.
[46] J. A.-E. of research design and undefined 2010, “Naturalistic inquiry,” *SAGE, Thousand Oaks*.
[47] M. Huysman, “Dynamics of organizational learning,” 1996.
[48] M. Schulz, “The Uncertain Relevance of Newness: Organizational Learning and Knowledge Flows,” *Acad. Manag. J.*, vol. 44, no. 4, pp. 661–681, Aug. 2001.
[49] L. C.-K. Management, O. Intelligence, and undefined 2012, “Organizational Learning and Change: Evolving Systems in a global community,” *eolss.net*.
[50] T. Arumugam, K. Iis, K. M.-I. journal of business and, and undefined 2015, “Conceptualizing organizational learning system model and innovativeness,” *ijbssnet.com*.
[51] L. Argote, *Organizational learning: Creating, retaining and transferring knowledge*. 2012.
[52] T. H.-I. and the D. Society and undefined 2003, “Learning and teaching in socio-technical environments,” *Springer*.