

***RESEARCHING ORGANIZATIONAL LEARNING:  
DIVERSITY OF MODES AND METHODS***

**Theme:** Methodology

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## Abstract

*This paper addresses the issue of diversity of research modes and methods in organizational learning. Conceptual ambiguities regarding the meaning of 'organizational' and 'learning' are reviewed and the subsequent impact on the choice of empirical methods are described. It is argued that instead of having a universal and yet standardized research approach, we should preserve the current divergence and engage in different research agenda. The specific research focus and relevant methodology would be signed in a way in order to fit one's ontological and epistemological assumptions about the entity and processes of organizational learning.*

## Introduction

Ever since the notion of organizational learning first appeared in March and Simon's (1958) landmark study of organizations, it started to generate an on-going debate and continuous discussions about the potential development of a theory of organizational learning. Despite a huge amount of work has been carried out in the past several decades to explore the nature, processes and enabling conditions of organizational learning (Huber, 1991; Crossan *et al*, 1995; Dodgson, 1993; Miller, 1996), there seems to be barriers ahead for forging a substantial theoretical advancement in the field.

Part of the reasons, as suggested by Miner and Mezias (1996), is due to the fact that there is a paucity of systematic and structured empirical learning research. Each major discipline, depending on its unique ontological background (Easterby-Smith, 1997), approaches the phenomenon from different perspectives and engages in a diverse research methodology, which often results in confusions and fragmented understandings about the real nature of organizational learning (Easterby-Smith *et al*, 1998). Therefore, even though repeated attempts have been made on a regular basis to clarify the meanings and underlying processes of the concept (Jones, 1995), the achievement so far is limited.

This paper intends to provide a roadmap for conducting empirical research in organizational learning. Following Easterby-Smith *at al* (1998), it is suggested that we should not impose a single understanding on the core concepts and should not adopt a unified approach for investigating the phenomenon. On the contrary, I believe that we should preserve the current diversions as each discipline has its distinct conceptual foundations and associated investigative methodologies. It would be beneficial for both academics and practitioners if one could appreciate the multi-faceted nature of the concept (Crossan *et al*, 1999) and embark on a different empirical path that suits their ontological and epistemological backgrounds.

This paper is divided into the following three parts. Part two traces the sources contributing to the current divergence about the undertaking of organizational learning research. The first reason is related to the entity conceived as learning. It is hard to reach a consensus whether the actions of individuals, groups, organizations or even networks of firms should be the analytical focus (Crossan *et al*, 1999). The second reason is concerned with the conceptualization of learning processes. There is a wide range of behavior that can be considered as possessing the qualifying characteristics of learning, such as changes of behavioral routine (Levitt & March, 1988), knowledge development (Fiol & Lyles, 1985),

institutionalization of experience (Lieberman, 1987), assumptions sharing (Senge, 1990), dialogical discourse (Schein, 1993), participation in social practices and identify formation (Brown & Duguid, 1991). The existence of multiple interpretations about the key learning entities and exemplary processes impedes the enhancement of scholarly work on the area.

In part three, different research methods of organizational learning are outlined. The main objective is to go beyond the traditional divide between qualitative and quantitative methods and look for variants in each category. Through the demonstration of the merits in each particular approach and its underlying methodological assumptions, it is argued that we should explore different opportunities and cast a wider net for adopting a relevant research model. The final choice, I believe, is dependent on the ontological assumptions of the researcher about the phenomenon under study.

In part four, the link between the differing views of organizational learning and the choice of inquiry method is established. My intention is not to come up with a holistic research model that can encompass different facets of organizational learning. Instead I try to propose a typology that is able to classify the diverse research methods and summarize their key contributions in a respective manner.

The paper contributes to the literatures of organizational learning by clarifying the debates about the proper conduct of empirical investigations (Miner & Mezias, 1996) into the subject. It is suggested that without a good overview of different modes of inquiry, the potential researchers would be difficult to take heed of the cumulative findings when carrying out their own inquiries and planning the research agenda.

## **‘Organizational’ ‘learning’ in doubt**

The problem of studying organizational learning, I argue, starts with the difficulty of developing a clear understanding about the concept itself. Even though there is no shortage of definitions and lexicons appearing in scholars’ toolkit (Bontis *et al*, 2002), the concept of organizational learning still remains, as coined by Weick and Westley (1996: 440), an ‘oxymoron’, a concept that is often elusive, contentious and dialectical.

This can partly be explained by the diverse ontological status of the meanings of both ‘organizational’ and ‘learning’. Research in organizations, according to Sandelands and Srivatsan (1993), is suffering from the problem of ‘non-experientiability’. They argue that the concept of organizations, unlike its counterparts in natural science, cannot easily be detected, visualized or described. It often invites abstraction and reification, or the tendency for arranging parts of object to be the integrated whole (p.4). The salient attributes and features of organization are yet to be clarified, which has further complicated the issue.

### ***Unit of analysis***

One major divide underlying the current confusions belongs to the definition of a proper unit of analysis. Studies of organizational learning often approach the phenomenon from individual, group or organizational levels (Crossan *et al*, 1999; Easterby-Smith *et al*, 2000). On one hand, the individual-based perspective emphasizes the influential function of key

personnel, namely the dominant cognition (Prahalad & Bettis, 1986) or upper echelon (Hambrick & Mason, 1984), on the decision making process in organizations. With their well-vested power of resource allocation (Bower, 1970), external information access (Barr *et al*, 1992), and the ability of steering the change process (Gioia & Chittipeddi, 1991), the top management teams are thought to have a significant yield on the development of organizational learning capabilities.

The contributions of key individuals toward the learning in organization are considered to fall into the following categories; (1) information filter (Barr *et al*, 1992) by sensitizing and re-orienting the firm to certain kinds of external environment challenges, and (2) personnel movement (Carley, 1992; Lant *et al*, 1992) by bringing new perspectives into the organization from the new recruits. As exemplified by Simon's (1991) often cited statements,

All learning takes place inside individual human heads; an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge the organization didn't previously have. (Simon, 1991: 125).

However, a word of caution should be shared when treating the top executives as the sole agent of organizational learning and holding their actions accountable for the whole organization. March and Olsen (1975) caution the assumption that an automatic link can be established between individual actions and organizational outcomes. By doing so, it may promote a sense of corporate elitism (Coopey, 1995) and under-estimate the contributions by other organizational members (Nonaka, 1988).

On the other hand, the organization-based perspective conceives organizations as an entity itself capable of making autonomous and independent decisions without the involvement of individuals (Huber & Daft, 1987; Weick & Daft, 1983). They are conceived as living and open social systems in their own right with cognitive capabilities (Huber, 1991) and behavioral orientations (Levitt & March, 1988). They are able to learn in the same way as individuals, capable of sensing and responding to the environmental challenges. Organizations develop and maintain learning systems, which are constituted by some contextual factors, such as culture, strategy and structure (Fiol & Lyles, 1985).

The assumption that organizations have some extra-human intelligence (Weick & Daft, 1983) opens up the space for reifications of the concept of organizational learning. A number of human attributes, such as collective mind (Sandelands & Stablein, 1987), absorptive capacity (Cohen & Levinthal, 1990) or organizational memory (Walsh, 1991), are adopted to anthropomorphize the learning behavior of organizations. The possession of these structural elements enables the organizations to engage in structured decision-making process independent of human involvement (Hedberg, 1981).

As critics of this perspective illustrate (Cook & Yanow, 1993; Pentland, 1995), there are some serious doubts about this assumption. Since organizations and individuals belong to two different entities, each has their own thought worlds, attributes and characteristics. It is far from clear whether the same learning processes can be applied to both constructs. If so, it may commit a category mistake defined by Ryle (1949) for using individual learning as a logical deduction to organizational learning, assuming that organizations only learn through the individual members (Simon, 1991: 125).

The above illustrations show the conceptual deficiencies of representing the organizations by just the key decision makers or considering them as a super-natural object with human characteristics. In the past decade, there appears a new middle-ground approach broadening the analytical scope and incorporating the group level. The proponents argue that organizational learning is a group-based phenomenon, which are consisted of multiple communities of practice (Lave & Wenger, 1991; Brown & Duguid, 1991), each sharing common practices, social identities and meaningful goals (Wenger, 1998). Both the interactions among and between community members drive the learning process and determine the ways that organizations can learn.

### ***Processes of learning***

In addition to the confusions over a proper definition of ‘organization’ and its constituent factors, another major divergence is related to the meaning or processes that are qualified as learning. It is often the case that researchers tend to portray the organizational learning process as a haphazard and eclectic phenomenon with strikingly different causes, effects and domains (Miller, 1996). But I argue that the unit of analysis adopted can partly explain the differences among these varieties of learning processes.

The individual-based perspective tends to concentrate on the cognitive processes of key individual thinkers in organizations (Bettis & Prahalad, 1995; Sparrow & Hodgkinson, 2002). From the individual-cognitive perspective, it is hypothesized that organizations learn through constant changes of both the composition and schematic relationships of the elements within the key individuals’ cognitive structures (Simon, 1991; March & Olsen, 1975; Hayes & Allinson, 1994). The focus is to understand the underlying factors that shape the processes and structures of the individual thought of these key individuals. Emphasizing the former means studying how information and beliefs are acquired, combined, processed and used in forming judgments and making decisions (Kiesler & Sproull, 1982; Thomas & McDaniel, 1990; Gioia & Thomas, 1995). Emphasizing the latter means describing the cognitive thought and decomposing its inherent organization (Laukkanen, 1994).

For example, in a study of the driving forces behind the significant change of firm’s strategic direction, Lant *et al* (1992) argue that the managerial interpretations of cause and effect relationships through prior knowledge and experience have a direct impact on the choice and implementation of major policy changes. They infer that each of the top managers’ has their own attributions for poor performance and possesses different degree of awareness about the environmental conditions. Some are concerned with some short-term issues, while others focus on a long-term perspective. The diversities underlying their mental schemas affect their likelihood of engaging themselves in a major turnaround decision, thus limiting the strategic options facing the organization and lessening its responsiveness to environmental changes. It would follow from this that the existence of these diverse interpretative schemes and development of consensus around them can both enhance and constraint an organization’s capacity for learning (Bettis & Prahalad, 1995; Fiol, 1994).

For the organization-based perspective, organizations are perceived to learn in a linear and mechanized process with cognitive and behavioral memories, and the process of learning is manifest through the processing of information and new knowledge (Huber, 1991; Woiceshyn, 2000). Huber (1991) proposes four theoretical constructs to summarize the

organizational learning process, which are knowledge acquisition, information distribution, information interpretation, and organizational memory. Information generated from both external and internal environment is interpreted and distributed in order to accomplish internal tasks and to coordinate diverse activities (Weick & Daft, 1983: 44). The new insights developed from shared interpretation of events are stored in various entities in organizations, namely physical location, operating procedures, individuals, codes of conduct and culture (Walsh & Ungson, 1991). The overall objective of organizational learning is assumed to be to reduce uncertainty and equivocality faced by the organizations from the increasing demand of coping with variety, internal coordination and an unclear environment (Daft & Lengel, 1986).

An entity learns if, through its processing of information, the range of its potential behaviors is changed... an organization learns if any of its units requires knowledge that it recognizes as potentially useful to the organization. (Huber, 1991: 89).

While both individual and organization-based perspectives share a ‘modernist’ assumption (Addleson, 1996) to classify knowledge, the outcome of learning, as ‘out there’ to be acquired, processed, analyzed and stored, the group-based perspective views learning as daily work practices situated in the organization context. The focus is on how learning activities are socially constructed (Nicolini & Meznar, 1995) in various communities of practice (Brown & Duguid, 1991; Wenger, 1998), so as to highlight the emergent and situated nature of learning (Lave & Wenger, 1991) by analyzing the social, structural and institutional dynamics occurred throughout the learning process.

The image of organizational learning as everyday work activity highlights the community (Easterby-Smith *et al*, 2000: 790) as the unit of analysis, with the focus on identifying the concrete experiences of the individuals’ knowing in action in a particular social context. In other words, learning is not so much as what the individual has learned cognitively, but about the extent that he/she can master the practice itself on a progressive basis through a continual interaction with other members in the learning communities to solve particular problems on hand, a process that is called legitimate peripheral participation (Lave & Wenger, 1991). The process takes place gradually when these shared work practices are preserved, upgraded and changed as a response to the changing conditions at the workplace.

In sum, the different viewpoints regarding what constitute as the essential properties of ‘organization’ and the qualifying processes of ‘learning’ lead to some divergent thinking in the field. Differences in the conceptual definition about the ontological and epistemological status of the phenomenon (Easterby-Smith *et al*, 1998) create a wide range of approaches for carrying out the empirical work. The following section provides a summarized analysis of the divergence of research modes engaged by the investigators for exploring organizational learning.

## **Diversity of research modes**

Studies of organizational learning often embark on a wide spectrum of empirical paths, depending on each researcher’s own assumptions about their specific roles, focus and epistemological stance on learning (Easterby-Smith & Araujo, 1999). Broadly speaking, we

can classify the organizational learning researches into three broad domains, namely cognitive structures, organizational adaptive process and social practices. Each domain focuses on a particular facet of the phenomenon and adopts different approaches of enquiring into the nature of organizational learning.

### ***Cognitive structures***

One research stream with strong influence of cognitive psychology explores the interpretive rules and cognitive structures in organizations. They have concerned the way that individuals interpret and make sense of the situations and events through the development and modifications of knowledge structure, schemata, or mental models (Porac *et al*, 1989; Stubbart 1989) that are used to reduce ambiguity and create new meanings (Melone, 1994).

In order to capture the content of interpretive schemes and represent the knowledge processes, a number of conceptual tools have been adopted to show the structure and interrelationship between different cognitive elements, such as mental models (Barr *et al*, Porac *et al*, 1989, Kim, 1994), cognitive styles (Hayes & Allinson, 1994), mindsets (Prahalad & Hamel, 1990), belief structures (Walsh, 1988), and cause-mapping (Laukkanen, 1994). With the help of these structured graphical presentations, factors affecting people's belief and their links can be established, so as to explore the thinking patterns of single actors like top manager or organizational groups and their formative logic behind.

Domain-based interviews, textual analysis, content analysis, questionnaires or even simulation are just some common methodological choices for representing both the individual and group cognitive patterns and their evolution over time. Despite the eclectic nature of the research methods, the focal point seems to concentrate on the exploration of beliefs and knowledge structures in organizations. For example, by looking at a detailed log of correspondence between managers in publicly listed company, Fiol (1994) traces the dynamics of cognitive development during the implementation of a project. It is discovered that both consensus and diversity can appear over the content and frame of communication process.

### ***Organizational adaptation***

Another research stream focuses on the adaptive processes and evolutionary behavior of organizations in response to the environmental change. An anthropomorphic understanding of the organization provides a conceptual basis for developing processing mechanisms to scan, interpret and analyze environmental events. Organizations are perceived to be able to learn from their own and other's experience for guiding their future behavior (Levinthal & March, 1993; Ingram & Baum, 1997). There is no shortage of conceptual frameworks making various propositions to improve the capabilities of learning in organizations.

For the empirical side, researchers tend to follow two main research traditions in exploring the mechanisms and processes of organizational learning. The first research tradition is quantitative in nature, with a heavy reliance on mathematical modeling (Barnet *et al*, 1994; Ingram & Baum, 1997; Ghemawat & Costa, 1993) and simulation studies (Bruderer & Singh, 1996; March, 1991; Lant & Mezias, 1990) to represent both the intra-and inter-firm learning dynamics. Specific model parameters and computational algorithms are proposed to simulate

the learning environment and capture the sequence of environmental adaptation and internal decision-making routines (Cohen, March & Olsen, 1976; Lant & Mezias, 1990). These learning models usually depict the goal setting and subsequent search and adaptive processes. One major advantage of this approach is the ability to portray and decompose the complexities of multi-party, multi-actions and multi-stage learning behavior in an abstract way. Selective comparisons of certain aspects related to learning can also be performed in order to gauge the overall impact on the organizations itself. But the results would only be meaningful when the specific assumptions and conditions of the models are fulfilled.

The second research tradition is more qualitatively oriented, driven by the methodological preference for in-depth case study (Kim, 1998; Woiceshyn, 2000). Instead of illustrating the learning processes in an abstract and simulated environment, the researchers emphasize more the contextual dynamics and embeddedness of learning in actions from a longitudinal manner. The access to rich details of history of operation, changes of firm strategies and orientations, development of environmental events and strategic behavior illustrates the emergence and interrelationship of the intra-organizational ecological process in different hierarchies. The strengths of this approach lie on the investigative power on capturing the dynamics between the situational context, actions and actors. It is even more suitable for the study with the focus on the interlocking learning practices happening in and between individuals, teams and organizational entities (Hawkins, 1994: 79).

### ***Social practice***

The research stream focusing on the actual work practices collectively engaged by people undertakes a rather different orientation. The emphasis is on the situated learning processes (Lave & Wenger, 1991), which is defined as the ongoing process of participation in the social and material context (p. 29). According to this definition, the focal point is the notion of 'situatedness' by stressing that learning is an integral and inseparable aspect of social practice.

In order to address the relational dynamics between the old timers and newcomers and the context of activity that people engage in order to give meanings out of its existence (Chaiklin, 1993), ethnographic studies with strong interpretive stance are commissioned to explore the nuances of activities and social discourses leading to the development of communities of knowledge and practice (Gherardi *et al*, 1998; Gherardi & Nicolini, 2002; Wenger, 1998; Cook & Yanow, 1993). The purpose is to seek a better understanding of the discursive practice embraced by the participants of different communities and the impact on learning through the investigations of their verbal accounts and comparisons of different perspectives (Carroll, 1998).

As seen from the classical study of Orr (1990, 1996) about Xerox photocopy machine repair technicians, the intricacies of situated learning process can only be revealed by looking at the actual practice of work, which consisted of a constellation of interconnected practices (Gherardi & Nicolini, 2002) that are often not identified by the formal task descriptions (Brown & Duguid, 1991). By observing how participants conduct the real work and tracking their use of both material and non-materials to accomplish the task on hand, the researchers can uncover the social structure of this practice, its power relations and the improvisation process.

Given the key divergences of viewpoints about the proper research modes of organizational learning, the following section attempts to provide a typology suggesting a roadmap for conducting future researches.

## **Linking ontology with epistemology**

Since organizational learning can be understood at the levels of individual, group and organization with different conceptualization of the learning processes, the development of a unifying research framework is neither necessary nor relevant. Instead I agree with Easterby-Smith's (1997) argument that we should adopt parallel research agenda. The following section shows the merits of different modes of inquiry in relation to the specific theoretical domains and conceptions of problems. Depending on the specific assumptions about the ontological and epistemological assumptions about organizational learning, I argue that there should be corresponding research topics and methods underlying the research agenda (Table 1).

= Insert Table 1 here =

An elitist approach conceiving top management teams as the key-learning agents in organizations would favor a research approach that inquires into the beliefs and thought processes of individuals. With a predominant assumption that learning takes place under individual's head (Simon, 1991), it would be sensible to capture individual's cognitive patterns and project their reasoning and analytical processes. The major emphasis is to understand the formation process of management thinking. By collecting information on how the respondents react to the external cues and diagnose the embedded cause-and-effect relationship, we can outline their causal thinking processes in a sequenced manner and make necessary comparisons with other people facing the same issues (Laukkanen, 1994).

In planning and executing the research agenda targeting at individual level learning, the target would normally be the top manager with significant yields on the organizational outcomes. Questions would be directed towards asking their viewpoints about a particular issues or their probable reactions towards a hypothetical scenario. Subsequent analysis would be performed in order to represent the managerial knowledge formation process and their linkage on the organizational actions.

However, the conception that organizations can learn under an autonomous way diverts the attention away from the individuals' cognitive framework to other macro-level elements in organizations. Structures, strategies, routines and organizational memory systems represent just a few learning channels accessible to the organizations facing a highly uncertain and rapidly changing environment. The researcher's task is to construe the relationship between those elements in organizations and their capacity to learn. Simulation modeling and longitudinal case studies are conducted to construe the key determinants and mechanisms of organizational learning.

A social construction perspective featuring learning as a group-based phenomenon changes the investigative lens to look at the interpersonal, inter-group processes in organizations. Instead of featuring learning as individual knowledge structures or adaptive process of

organizations, what matters here is the social and cultural dynamics occurred both on and off the work-site. Detailed ethnographic studies are conducted to diagnose the language game, power relations, and the improvisation processes that are required to get the work done, detailing the meaning making, shared knowing and sense-making processes. The objective is to put forward a comprehensive theory emphasizing the socially negotiated character of learning within a socially and culturally construed world.

## **Concluding remarks**

The review of past literatures indicates that there are markedly different understandings about the entities and processes of organizational learning, which is believed to obscure the development of accumulated knowledge in the field. By grouping the current divergences into several major categories, this paper intends to provide a preliminary typology summarizing different modes and methods of inquiry.

The major argument in this paper is that instead of having a universal and yet standardized research approach, we should preserve the current diversities and engage in different research agenda. Depending on one's ontological and epistemological understanding, the specific research focus and relevant methodology would differ. An individual-based learning orientation would focus on the exploration of content and process of cognitive change, whereas the emphasis on the learning of organizations would concentrate on the information processing behavior of organizations. A recent upsurge of social learning theories shifts the analytical focus onto the dialogic practices and their interactive behavior collectively adopted by the learning communities. Each perspective shares distinct features and follows their own traditions to develop unique research agenda specific to their own theoretical domains.

A summarized analysis of these various research traditions in organizational learning provides a roadmap to the readers for conducting further researches in the field. As there is a wide array of options inquiring into the nature and process of organizational learning, the prospective researchers should first determine their own ontological stance and hence the inquiry (Easterby-Smith *et al*, 1998). The final choice of inquiry method should reflect the above considerations.

**Table 1: Bridging ontological and epistemological assumptions**

<i>Ontological assumptions</i>		<i>Epistemological stance</i>	
Entity of learning	Key learning processes	Methodological approach	Research focus
<b>Individual</b>	Changes in schematic and compositional elements of the interpretative structures of key learning agents (e.g. top management team) in organizations.	Narratives Content analysis Domain-based interviews Cause-mapping Surveys	Cognitive rules Beliefs structures Knowledge processes Schemata Mental models
<b>Group</b>	Collective engagement in the preservation, sharing and upgrading of daily work practices in response to the changing conditions in workplace.	Ethnography Discourse analysis Case studies	Dialogues Situated work activities Relational and cultural dynamics among members
<b>Organization</b>	Acquisition, interpretation, distribution and storage of information throughout the organizations in a sequenced and structured manner.	Simulations Mathematical modeling Case studies	Experiential learning process Adaptive behavior Changes in organizational routines Strategic decision making process

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