

Organizational Learning as a feedback system: a Conceptual Framework

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Abstract

Organizational learning is becoming a major concern to researchers and practitioners. More and more researchers focus on how to facilitate organizational learning through the improvement of individual learning. However, even individual learning is improved and the learning outcomes are sustained in an organization, it is not necessary for the organization to function better. Due to division of labor, organizations consists of tasks by tasks. Various learning behaviors may happen at the same time and they may all influence each other. The performance of organizational learning as a whole is more than each division's learning. To view organizations as systemic interlocked behaviors and interdependent actions, this paper attempts to find out the relationships between subunits' actions to achieve their objectives and the performance of organizations as a whole. Impediments and difficulties in the process of organizational learning are discussed and suggestions are made to researchers and practitioners interested in organizational learning for further endeavors.

1. Introduction

Organizational learning is no doubt an important concern to organizational researchers and practitioners. However, few theories or models of organizational learning have widespread acceptance, even the basic concept of what organizational learning is (Fiol & Lyles, 1985; Huber, 1991, Kim, 1993). Major disputed issues are concerned with the contents and agents of organizational learning (behavioral changes or cognitive changes, individual learns or organization learns by itself), connections between individual learning and organizational learning, and the relationships between organizational learning and organization's performance.

Following the integral definition of organizational learning by Fiol and Lyles (1985), organizational learning is to be treated as the cognitive and behavior changes

of organizations in this paper. An organization can not learn by itself, but rather by its members as agents. Several researches focus on the linkage between the individual learning and organizational learning and on the skills to facilitate organizational learning. However, most organizations in fact operate in the form of division of labor, and various organizational learning processes ongoing concurrently. The performance of organizational learning as a whole is more than the sum of each division's learning. Based on the basic organizational learning cycles developed earlier (March & Olsen, 1975; Hedberg, 1981; Kim, 1993), this paper emphasizes more on the linkage between organizational learning as a whole and various ongoing learning cycles and processes. Each learning cycle and process is to be treated as reorganizing feedback mechanism to achieve the task's objectives. Organizational learning as a whole is a feedback system of those interlocked behaviors between various learning feedback loops. Possible impediments and difficulties in a organizational learning feedback system are identified and suggestions are made to researchers and practitioners interested in organizational learning for further endeavors.

2. Review of organizational learning literatures

A number of recent research works deal with organizational learning. Fiol and Lyles investigate related literatures to clarify the definition of organizational learning (Fiol & Lyles, 1985). They distinguish learning from merely change without cognitive improvement. Organizational learning is defined as the development of insights, knowledge, and associations between past actions, the effectiveness of those actions, and future actions. Learning accumulates, maintains, and restructures knowledge that changes environment, and learning is the result of both adaptive and manipulative behavior (Hedberg, 1981). Organizational learning is the process by which knowledge about relationships between the organization and the environment is developed and is a process of putting cognitive theories into action (Hedberg, 1981; Argyris & Schon, 1978, Daft & Weick, 1984, Huber, 1991).

Adopting this definition of organizational learning, researchers further discuss how an organization learns and how to facilitate organizational learning. Individuals are the agents of organizational learning (Cyert & March, 1963). Although organizational learning is accomplished by individuals, it would be a mistake to conclude that organizational learning is nothing but the cumulative result of their members' learning (Hedberg, 1981). Kim builds a framework to link individual learning and organizational learning together with experiential learning model (Kolb, 1979). Kim proposed several methods to improve the linkage between individual learning and organizational learning to transfer individuals' mental model into organizations' shared mental models. (Kim, 1993). Bohm stresses the potential of dialogue to create people's shared mental model (Bohm, 1996). Senge thinks that individuals can learn to experience awareness of personal causal responsibility, thus facilitate organizational learning (Senge, 1990). Argyris and Schon focus on the development of several tools to solve these impediments. (Argyris & Schon, 1978; Argyris, 1982; 1990). Morgan suggests five principles of holographic design from the organizational metaphor as a brain: (a) build the "whole" into the "part" by visions, values and culture, networked intelligence, etc; (b) importance of redundancy in information processing and skills and the design of work; (c) requisite variety. Internal complexity must match that of the environment; (d) minimum specs. Define no more than is absolutely necessary; (e) learn to learn (Morgan, 1996).

Although the mechanism between individual learning and organizational learning is being established and more and more researches contribute to the facilitation of organizational learning cycles, the performance of organizations as a whole is not necessarily to be better. Most organizations operate actually in the form of division of labor and tasks are interdependent with each other. In carrying out those tasks, various organizational learning processes may exist concurrently and each learning process influences one another. As a result, the performance of organizational learning as a whole is more than the sum of each division's learning. With emphasis on the interrelationships between various learning processes in the organization, this paper attempts to establish an organizational learning feedback system framework to find out the relationships between subunits' learning processes and the performance of the organization. The task carrying process, triggers of learning behaviors, linkage between cognition and actions, and relationships among learning behavior in the task reforming processes are the major components of the framework. Besides, impediments and difficulties emerge in the organizational learning feedback system are also identified.

3. Organizational learning feedback system

Decision-making responsibility is factored or parceled out among a variety of subunits in the organizations. Division of labor is not only seen in the horizontal working procedures, such as the division of decision making between marketing, production, pricing, finance, labor management, etc, it also extensively used in the hierarchical division of decision making and action taking. Tasks carrying in those horizontal and hierarchical divisions of labor constitute an organization. That is what conceived as organizing properties of an organization by Weick (1979).

Task is the basic unit of individual learning and organizational learning. In the process of task carrying, an individual observes related facts of the task, assesses what happens, designs new organizing methods, implements new actions, and shares the knowledge and new design with those collaborated members (Kim, 1993). Because the organization is beneficiary of the knowledge, this learning is organizational (Huber, 1991). Reorganizing is a continuous genesis and a process of creation and recreation, as Piaget describes (Piaget, 1968). Figure 1 is the reorganizing process of task or the basic unit of organizational learning feedback process. Dashed lines represent information passing, while solid lines represent the physical changes to task organizing ways or task environments.

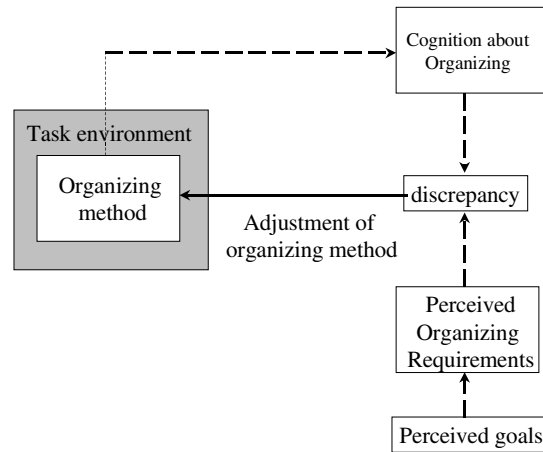


Figure 1 Basic unit of organizational learning

In the reorganizing process in Figure 1, the individual cognition or the groups shared mental model change does not equal to the increase of causal knowledge about the task. In cognitive researches, the engine of the adjustment actions lies in the imbalance between task performer's cognition and the stimulus he perceives. Learning is the process to eliminate the imbalance. Reality is constructed anew each time a learner acquires a new concept or structure (Piaget, 1968). There are several methods to do so, such as imitation and trial and error. Imitations and trial and error indeed change the task performer's cognition state, but they do not necessarily increase his causal knowledge about the task. However, for the purpose of transferring experience, the researchers and practitioners' ultimate goal is to improve the knowledge of knowing why and knowing how (Edmondson & Moingeon, 1996).

In real world, organizational learning is far more complex than described above. Various tasks are performed and reorganized at the same time and they are all intertwined. Interlocked behaviors and interdependent relationships constitute what an organization is. Therefore, organizational learning is a system composed of multiple organizational learning processes, rather than a simple task reorganizing process. The organizational learning system framework is shown in figure 2.

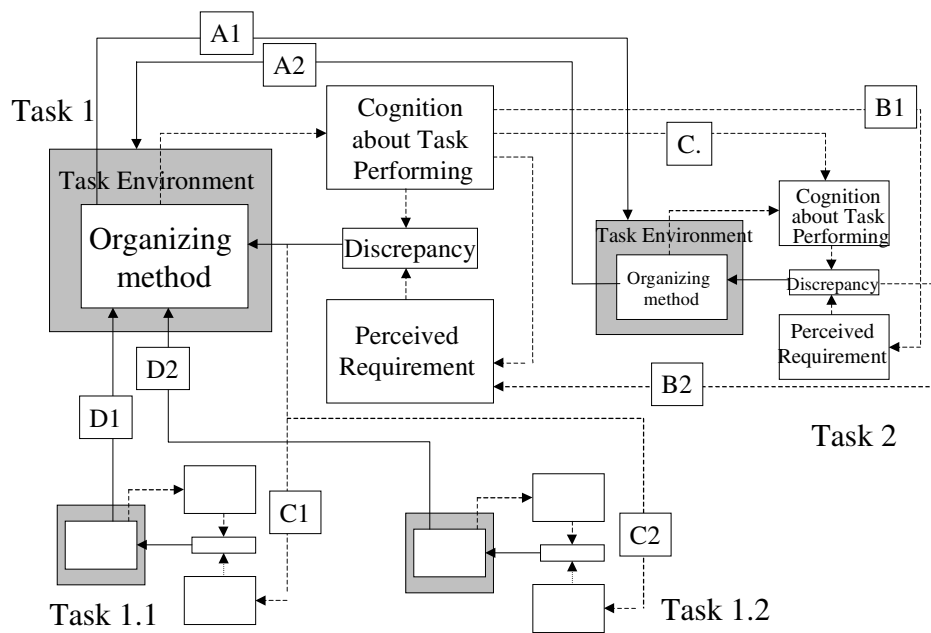


Figure 2 Organizational learning as a feedback system

Thompson identifies three kinds of interdependence between organizational divisions, pooled, sequential, and reciprocal (Thompson, 1967). Down to the task level, this paper identifies several relationships between tasks performing in Figure 2. Each different kind of relationships is marked with different letters. Relationships A1 and A2 represent that each organizing way of task 1 and task 2 influences each other's task environment, for example, the interactions between R&D department and production department. Relationship B1 and B2 represent that both task performers of task1 and task2 adjust their perception of tasks' objectives, such as negotiation. A1, A2, B1, and B2 are relationships generated in horizontal division of task1 and task2. Relationships C1, C2, D1, and D2 are relationships of hierarchical division of tasks. Task1 is to the super task, which decides the objectives of subtasks, namely task3 and task4. Because of the imposed objectives, the perceived requirements of task3 and task4 are influenced by task1, representing by relationships C1 and C2. In turn, the way task3 and task4 organize constitutes part of task1's organizing method, representing by relationship D1 and D2.

Therefore, organizational learning system is the aggregation of the individual or group learning happened in each task carrying out process. The performance of organizational learning is not the sum of each learning process. Because of the inter-relationships among tasks, the performance of organization as a whole depends on whether synergy or counterbalance is generated. When synergy is presented, organizational learning means that organization as a whole has the ability to self-organize and to regenerate itself on a continuous basis because the premise of organization's vision is enfolded in all tasks and divisions (Senge, 1990; Morgan, 1996). Individual learning has a positive effect on the performance of organizational learning in this kind of organization. However, in most instances, counterbalance is the principal phenomenon in reorganizing processes. Consequently, the performance of individual learning does not necessarily correspond to the improvement of organizational learning.

4. Impediments of organizational learning feedback system

In the organizational learning system, several impediments might exist. To facilitate organizational learning and improve the performance of organization, this section discusses impediments within and between task reorganizing processes.

From the perspective of feedback system, impediments and difficulties may exist in different stages of learning process. Based on March and Olsen's work (1976), Kim (1993) identifies seven possible difficulties in the task reorganizing process. Individuals have to figure out what the task and its environment are to determine what they should do and implement the decided organizing method to achieve the perceived objectives. In doing so, role-constrained learning occurs when individuals attempt to change the organizing way of tasks. Constraining role definitions and standard operating procedures prevent individuals from changing their behaviors in response to new knowledge (March & Olsen, 1976; Hedberg, 1981).

Then, individuals have to know what happens and whether their methods work. Problems of superstitious learning and learning under ambiguity (March & Olsen, 1976) emerge because the causal relationships of tasks are too complex to understand, or the time lag between result and actions are too long or the task scope are too wide to observe. Individuals or groups can not formulate appropriate relationships between their actions and results and they can not design new action strategy for tasks. Sometimes, the information feedback property of learning process does not even exist because of the long time lag and wide scope of tasks. Individuals and groups just react to various events. These situations often happen in the dynamic complexity problems (Kim, 1993; Senge, 1990). Besides, because of the divided decision making and action taking responsibilities, individuals can not judge whether their decisions are right or not. It also influences individuals' learning. In forming the mental models, learners mental models may also be too rigid to change. It may occur both in individuals' mental models and group's shared mental models, such as group thinking. Problems of fragmented learning occur in the tasks carried out by groups of people. It means that even some members learn some knowledge from the process, they can not share the gained knowledge with other collaborators.

Among impediments of organizational learning, bad design of objective system is the most serious problem. Objectives guide and direct each learning process. Individuals and groups proceed their own regulating and learning process with the objectives of tasks. When the objectives are clearly and properly defined, each regulating process runs smoothly and contributes to the performance of organization as a whole. If it is too difficult to achieve the objectives, individuals may modify or erode their perceived goals to decrease the pressure they feel. With objectives unclear and equivocal, individuals can not even have any learning actions because they do not know where to go (Dorner, 1989; Senge, 1990). Objective system not only guide each learning process, it also connect tasks to tasks. A bad design of objective system may lead to individuals and groups impinge others' task carrying because of conflicting goals and harm the organization's performance.

To eliminate these impediments and overcome the difficulties, theories and tools are proposed and designed. The paper does not intend to describe those tools. Efforts made to improve organizational learning can be divided into three groups. The first

group is focus on the establishment of task objectives, such as Drucker, Senge (1990), Fritz (1996), etc. The second group is focus on behavior complexity to improve individuals' mental models and to improve mental model sharing, such as Argyris and Schon (1978), Bohm (19), Kim (1993), Senge (1990), etc. The last group facilitates individuals and groups to obtain a better understanding and a policy design in dynamic complexity and dynamic decision making, such as System dynamics pioneered by Forrester (1961), Sterman (1989), Dorner (1989), etc.

5. Conclusion

Recently, more and more attention has been paid to organizational learning issues. However, the gap between academic research and reality is still large at present. To improve organizations' performances, one has to facilitate organizational learning as a whole. That is, the focus should be the whole organizational learning system, not merely the individual organizational processes. An organizational learning system consists of more than static relationships between organizations and individuals. The interlocked relationships among various organizational learning processes are more important than the learning processes themselves. This paper investigated the interlocked relationships and clarified what organizational learning looks like with a feedback system perspective. Some relationships between different organizational learning processes were also addressed. Making use of the interlocked behaviors among various organizational learning processes pointed out in this paper, further researches can be carried out to explore those relationships more deeply by means of empirical studies. Interfaces of various tasks have to be built so that the performance of each learning process can be maximized. Furthermore, interested researchers can focus on the impact of those interdependent relationships to see how each regulating process causes the organization as a whole to change. Issues of organizational design and evolutionary (Hutchins, 1996) can be approached with the organizational learning feedback system's framework. Besides, in this paper, possible impediments and difficulties in the organizational learning feedback system are identified. Systemic instruments and means can be designed to facilitate organizational learning process and system.

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