From Individual Learning to Organizational Learning

Delio Ignacio Castaneda[1] and Manuel Fernández Rios[2]
[1]Faculty of Psychology, Universidad Católica de Colombia, Bogotá Colombia
[2]Faculty of Psychology, Universidad Autónoma de Madrid, Spain
dicastaneda@ucatolica.edu.co
mfrios@uam.es

Abstract: In the last few years several theoretical models of organizational learning have been developed from the perspective of diverse disciplines. One of the most influential models is that of Crossan, Lane and White (1999), who believe that organizational learning occurs through four processes (intuiting, interpreting, integrating and institutionalizing) and in two ways: from the individual to the organization (feed forward) and from the organization to the individual (feedback). This model, however, attributes to intuiting (defined by the authors as "the preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience" p. 525) the whole explanation for individual learning, ignoring the influence of conscious learning processes. Zietsma, Winn, Branzei and Vertinsky (2002) introduce two modifications to the model: the process of attending and the process of experimenting. The value of their proposal lies in the recognition of the influence of a conscious process in learning, namely attention. Attending, however, is just one of the many processes that intervene in individual learning. Castaneda and Perez (2005) make a contribution to the original model of Crossan, Lane and White (1999) by redefining individual learning from the perspective of *social cognitive theory* as developed by Albert Bandura (1986). The result is an integration of human capabilities and learning sub-processes beyond mere intuition that excludes other cognitive processes and forms of conscious learning. Humans have the capacity for symbolization, forethought, learning through modeling, self-regulation and self-reflection. Individual conscious learning includes the process of attention; yet, at the same time (according to Bandura, 1986), it includes three other processes: retention, production and motivation. This paper presents an improvement proposal at the group level of the model, adding two conscious processes: conversation and social modeling. Finally, a case is described with examples of each of the new introduced processes, at the individual and group levels.

Key words: organizational learning, individual learning, group learning.

1. Introduction

Organizational learning is a field of academic research and professional practice with a relatively recent development. The first reference to organizational learning is presented by Cyart and March (1963) in "*A Behavioral Theory of the Firm."* According to Cyart and March, companies learn from experience with the intention of adapting themselves to the conditions of the environment. Two years later Cangelosi and Dill (1965) published the article "*Organizational Learning: Observations towards a theory*". This was the first time the words "organizational learning" were used in the title of a publication. In the 70s the famous work of Argyris and Schön (1978), "*Organizational Learning: A theory of action perspective,*" introduced the concepts of single loop learning and double loop learning. Other important publications in that decade appeared by Duncan (1974), March and Olsen (1976), and Duncan and Weiss (1979). Representative works of the 80s are those of Hedberg (1981) on types of learning, of Shrivastava (1981) about learning systems, of Daft and Weick (1984) regarding organizations as systems of interpretation, and those of Fiol and Lyles (1985) in relation to levels of organizational learning. In the decade of the 90s there was an explosive growth of publications on organizational learning; perhaps the most quoted publication is the special issue of the journal *Organization Science* (1991). Organizational learning is still an area of interest if measured by the number of publications in its field (Maier, Prange, and Rosenstiel, 2003).

Organizational learning is understood here, from an academic point of view (Tsang, 1997; Easterby and Lyles, 2003), as the study of learning processes of and within an organization. Particularly, organizational learning is a process based on individual learning through private and public organizations engaged in creating and obtaining knowledge for the purpose of institutionalizing it in order to adapt as an organization to the changing conditions of the environment or to change the environment proactively, depending on its level of development (Castaneda and Fernandez, 2007).

2. The organizational learning model of Crossan, Lane and White (1999)

Sometimes research based on previous results is deficient (Easterby, Crossan and Nicolini, 2000; Zietsma, Winn, Branzei and Vertinsky 2002; Castaneda, 2004); for this reason, the purpose of this paper is to suggest a theoretical improvement of the original model of Crossan, Lane and White (1999) and of subsequent proposals (Zietsma, Winn, Branzei and Vertinsky 2002; Castaneda y Perez, 2005).

Reference this paper as:
Castaneda, D. I. and Rios, M. F. "From Individual Learning to Organizational Learning." *The Electronic Journal of Knowledge Management* Volume 5 Issue 4, pp. 363 - 372, available online at www.ejkm.com

The model of Crossan, Lane and White (1999) of organizational learning is well-known and often used in academic contexts. The value of the proposal lies in its integration of three levels of learning into the same model, namely individual, group and organizational learning, and of two routes of learning: from the individual to the organization and from the organization to the individual. Individual learning itself does not guarantee organizational learning; it is necessary a transference process of knowledge among people, with the purpose of institutionalization (Senge, 1990; Wang and Ahmed, 2003; Easterby and Araujo, 1999).

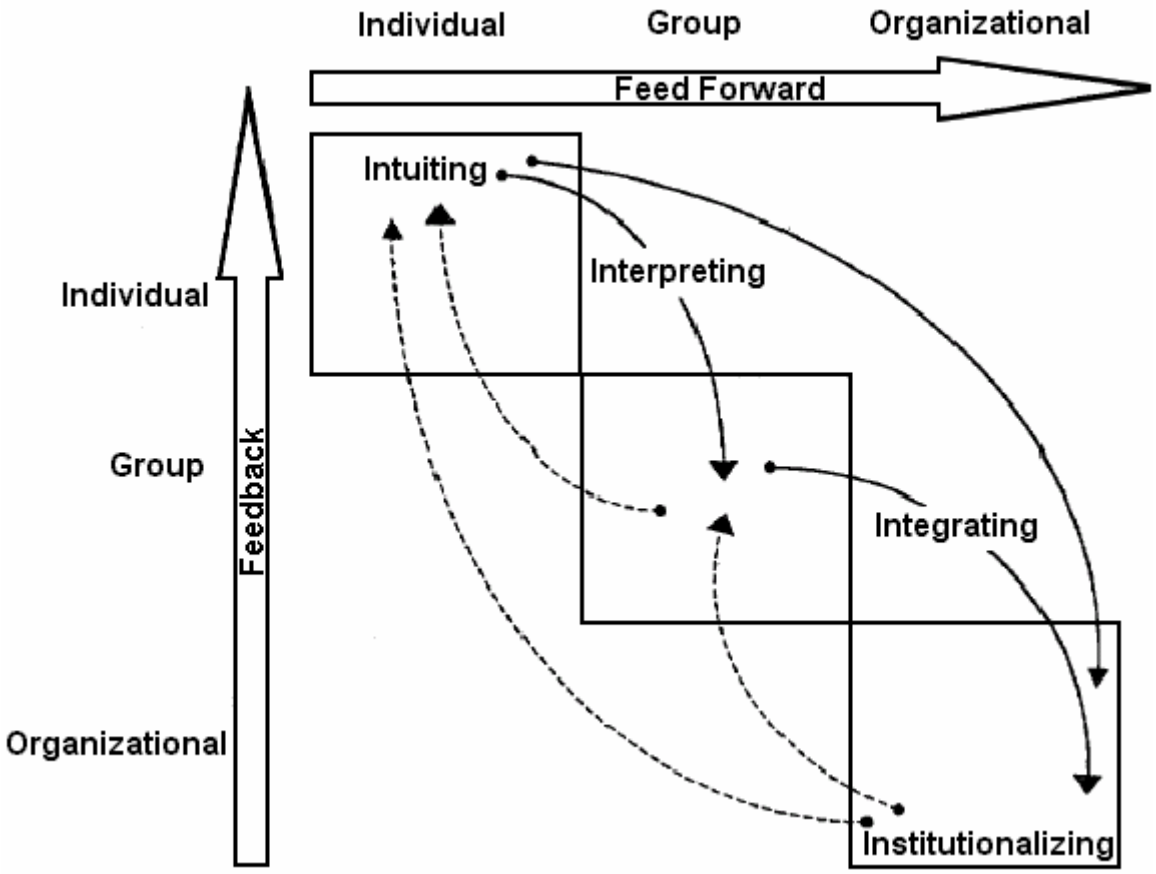

Figure 1: Crossan, Lane and White Model (1999) of Organizational Learning

The model of Crossan, Lane and White (1999) identifies four processes of learning: *intuiting, interpreting, integrating* and *institutionalizing* (see figure 1). The first process, *intuiting*, takes place at the individual level. Crossan et al. (1999), based on the work of Weick (1995), defined intuiting as "the preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience" (p. 525). In the words of Underwood (1982), it is critical to understand the subconscious in order to understand how people comprehend something new for which there was no prior explanation. A limitation of the model, however, is the belief that *intuiting* is the unique process that explains individual learning; most of human learning is a conscious process. Later on in this paper the relevance of conscious processes in organizational learning will be defended from the perspective of the *social cognitive theory* of Bandura (1986).

The second process, *interpretation*, occurs at the individual and group levels. It is defined by Crossan et al. (1999) as "the explaining through words and/or actions, of an insight or idea to one's self and to others. This process goes from the pre-verbal to the verbal, resulting in the development of language" (p. 525). Individuals think about their intuitions and share them with others, thus transferring them to individual and collective interpretation (Weick, 1995; Zietsma, et al, 2002). Preverbal intuitions are shaped and shared through conversation, imagery, and metaphors (Crossan, et al., 1999). In a broad vision Huff (1990) suggests that individuals develop cognitive maps from their context while at the same time these maps affect what part of the context is selected and interpreted. This conception is compatible with the concepts of *social cognitive theory* previously called *theory of social learning* and later changed to *social cognitive theory* (Bandura, 1982, 1986), which proposes a more comprehensive explanation of individual learning.

The *social cognitive theory* of Bandura (1986) has some advantages. On the one hand, it describes and integrates human cognitive capabilities and their relation to learning, which goes beyond the concepts of

intuition and interpretation; on the other hand, it explains the reciprocal influence between cognition, behaviour and environment. Additionally, it explains how learning occurs in a social context.

The third process of the model of Crossan, Lane and White (1999) is *integrating*, defined as "the process of developing shared understanding among individuals and of taking coordinated action through mutual adjustment. Dialogue and joint action are crucial to the development of shared understanding" (p. 525).

The fourth concept, *institutionalizing*, "is the process of ensuring that routinized actions occur. This is the process of embedding learning that has occurred by individuals and groups into the organization and it includes systems, structures, procedures and strategy" (Crossan, et al., 1999, p.525).

The processes of *institutionalizing* will not be discussed in this paper; instead, a proposal for the improvement of the model will be postulated, particularly at the group learning level.

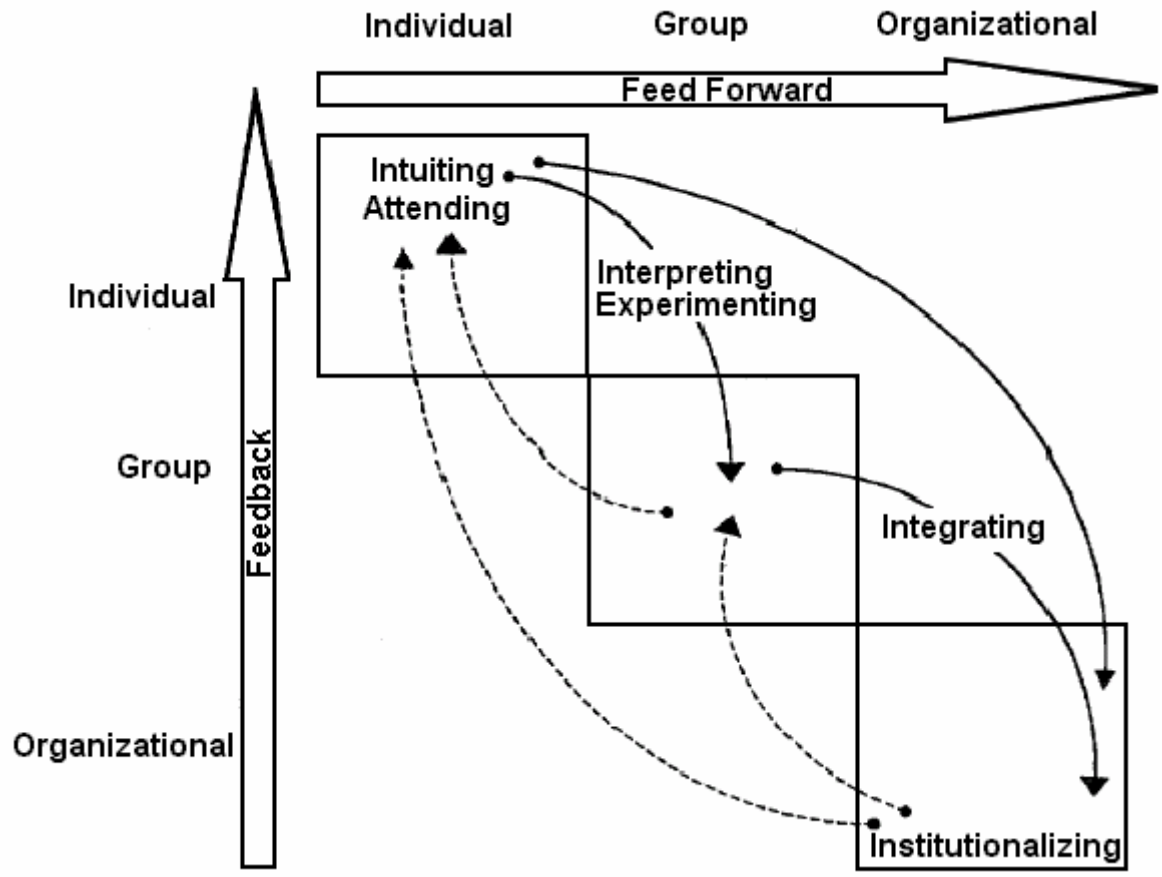

Figure 2: Zietsma, Winn, Branzei and Vertinski (2002), extended model of organizational learning

3. The improvement proposal of Zietsma, Winn, Branzei and Vertinsky (2002)

Zietsma, et al. (2002) presented an improvement proposal of the multilevel organizational learning theory of Crossan, et al. (1999). The first process added at the individual level is called *attending*, a name adopted from Kleysen and Dick (2001), understood as an active process of seeking information from the environment. Continuing in the same direction, they added a second active process of learning called *experimentation* (see figure 2). Zietsma, et al. (202) stated that "individuals and the groups experiment and the result of their actions add substance to their cognitive interpretations" (p.63).

In their research based on a Canadian company, Zietsma et al. (2002) found support for the four processes of organizational learning proposed by Crossan et al. (1999) and for the two processes explained by them. The main contribution of the work of Zietsma et al. (2002) consisted of emphasizing the importance of active learning. If the individual does not realize that results are a consequence of his actions, then little or no learning occurs (Bandura, 1986).

4. The social cognition approach applied to organizational learning

The social cognition approach deals with how people interpret and create a social environment (Weiner, Graham, Taylor and Meyer, 1983; Gioia and Sims, 1986). It studies the social behaviour and mental processes present while individuals interact (Martin and Clark, 1990). It is also about the social processes involved as a whole in information acquisition, storage, transmission and use, with the purpose of creating intellectual products (Larson and Christensen, 1993).

Organizational learning is a social process (Akgün, Lynn and Byrne, 2003). If social cognition studies how individual cognition is influenced by interaction with other individuals and by organizational norms, routines and culture (Virkunnen and Kuuiti, 2000), then it is possible to integrate cognition and social interaction into the study of organizational learning (Alllard-Poesi, 1998).

5. The social cognitive theory of Bandura

According to the *social cognitive theory* of Bandura (1986), individuals are not governed by internal forces or by external stimuli. Human function is explained by a triadic reciprocity where personal factors, environment and behaviour interact. Is behaviour controlled by cognitive factors or by external stimuli? Bandura (1997) declares that people are producers as well as products of their social environment. Internal personal factors (in the form of cognitive, affective, and biological events), behaviour and environmental events all operate as interacting determinants that influence each other. Reciprocity, however, does not mean equal strength of influence. When the requirements of a situation are weak, then personal factors are predominant in the regulator system (Bandura, 1983).

With regard to organizational learning, Bandura (1997) states that organizations are changed by people's behaviour. The impact of sociostructural factors on organizational performance is mediated by individual learning. Organizational learning occurs through interactive psychosocial processes, not only in the context of organizational attributes operating independently of human behaviour. Organizational learning is a collaborative effort where individuals create new ideas by sharing their knowledge through interaction with others.
According to *social cognitive theory,* individuals are not only reactive to situations, but also proactive and anticipative, and, in addition, function as regulators and self-evaluators of motivations and actions (Bandura, 2001). Persons are organisms with aspirations and the capacity for anticipatory self-control of behaviour (Bandura, 1991). In this context an important concept is that of human capabilities. Bandura (1986) states that humans are capable of: symbolizing, learning through modelling, forethought, self-regulation and self-reflection.

Symbolizing means using symbols as a mechanism of change and adaptation to the environment. Through symbols people give significance, shape and continuity to lived experiences. At the same time, people use previous knowledge and the capacity to symbolize to decide on what action to take. It is not necessary to perform a certain action in order to solve a problem, but people symbolize multiple situations in their mind before acting.

Forethought means the capacity to regulate future actions. People use forethought to predict consequences of actions, to formulate goals and to motivate themselves in an anticipatory way. Additionally, people not only learn from their own behaviour, but they can learn through modelling, observing other's behaviour and through the consequences of their own actions. Through modelling, individuals can learn the rules of behaviour just by observing. Furthermore, self-regulation means that part of people's behaviour is self-motivated and regulated by self-evaluation. Finally, self-reflection means that people have the capacity to know themselves. Individuals can observe their ideas and predict their actions accordingly. One of the most representative capacities for self-reflection in humans is self-efficacy. This is the belief that their capacities can produce effects (Bandura, 1997).

Another important concept of Bandura (1986) is that of the component process governing observational learning. According to the author most of human behaviour is learned in a conscious way by observing others. Observational learning is governed by four component processes: attention, retention, motor preproduction and motivation. First, an individual cannot learn much by observation alone unless he or she attends to and perceives accurately the significance of reality. Second, what it is learned has to be represented to memory in symbolic form. Thirdly, symbolic representations have to be converted into appropriate actions. Finally, people do not enact everything they learn, but behave according to their motivation.

Attention is a cognitive process which regulates exploration and perception. Attention determines in a selective way what is chosen and depends on the characteristics of observers, on the situation and models. Perceptions are guided by preconceptions, so that the cognitive skills of the observer and their perceptive tendencies lead the individual to observe some things and ignore others. At the same time, observational skills influence the amount and quality of learning. People learn not only activities or tasks but also rules.

Retention is the second process which consists of transforming the information of an event in order to be represented to memory as rules or concepts. Learning is supported by two systems of representation: image and verbal constructions. Bandura, Jeffery and Bachicha (1974) have demonstrated that learning involves active construction of symbols by the individual and also that codification structures affect retention.

Motor reproduction or production is the third process and it is about conversion of symbolic representations into actions. In order to act, it is necessary for the individual to organize answers in space and time.

Finally, motivation is the fourth process. Bandura (1986) distinguishes between cognitive acquisition and behaviour. An existing learning turns into behaviour depending on the importance of the perceived consequences. All of the following play an important role in human motivation: external social and tangible incentives, modelled incentives, (that is, observed benefits awarded to others for their behaviour), as well as self-initiated incentives. Bandura (1965) found that in the presence of incentives a not yet shown learning can be transformed into action.

6. The improvement proposal of Castaneda and Perez (2005)

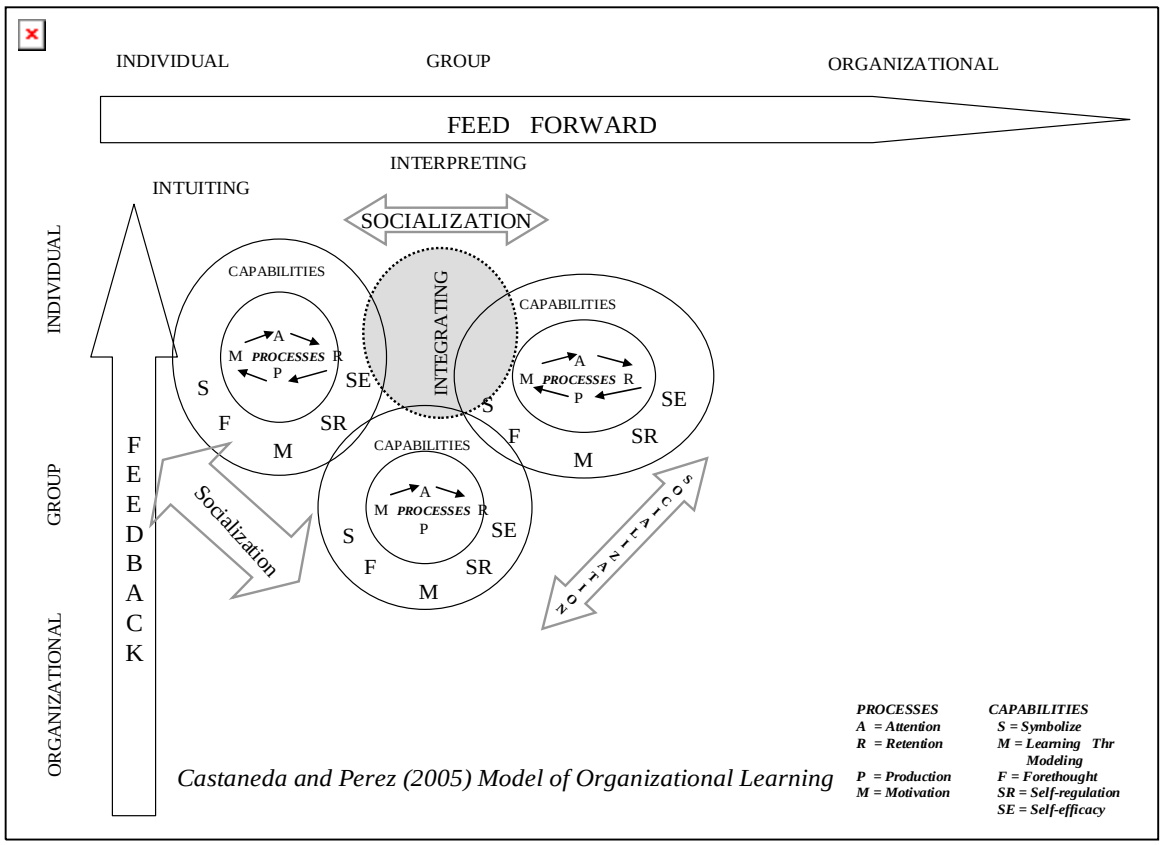

Figure 3: Castaneda and Perez' (2005) extended model of organizational learning.

The *social cognitive theory* of Bandura (1986, 2001), enriches the Crossan, Lane and White model of organizational learning. In particular, a broader understanding of individual learning is incorporated into the model, adding conscious processes. In the original proposal (Crossan, Lane and White, 1999), individual learning is explained as a result of a process called *intuiting*. According to Hogarth (2001) intuition is characterized by a lack of awareness about how judgements and results are acquired. In this sense, intuition only explains a kind of learning where attention is not required; most learning in the context of organizations, however, is based on direct experience and conscious observation.

Zietsma, et al. (2002) added a process called *attending* to the individual level. This is an outstanding improvement, since most of human learning is a conscious process. However, human learning includes other identifiable processes in the context of human capabilities as shown by authors like Bandura (1986, 1997).

Besides attention at the individual level of the model, Castaneda and Perez (2005) incorporated three new processes: retention, production and motivation. At the same time, because of human complexity, they also included what Bandura (1986) calls human capabilities: symbolizing, learning through modelling, forethought, self-regulation and self-efficacy as a self-reflection capacity (See figure 3).

Including a human capabilities component in the model broadens understanding of learning. Humans are active beings, capable of observing, describing and analyzing reality. Additionally, the proposal suggests using the term *socialization* along with the term interpretation to signify the process of learning with others in a conscious way. Traditionally, interpretation is considered a personal, not a collective process. On the other hand, individuals do not learn exclusively from sharing intuitions but also as a result of conscious thoughts, ideas and previous experiences.

7. The proposal of this paper

The proposal of Castaneda and Perez (2005) has received positive feedback in its relation to the inclusion of psychological mechanisms at the individual level of learning. At the same time, using a simpler graphic representation of the model has been suggested. A new proposal is herewith presented (see figure 4).

A second input to improve the model is to include two conscious processes at the group level of learning: *Conversation* and *social modeling*.

In the original proposal, Crossan, Lane and White (1999) stated that group learning can be explained by a process called *interpretation*. The authors stated "*interpretation* has to do with refining and development of intuitive insights" (p. 525). The raw material for *interpretation* is intuition, a preconscious process. Crossan, Lane and White (1999) documented the importance of conversation in *interpretation*; conversations, however, are not made up only of people's intuitions but of conscious thoughts and observations.

Conversation is a central aspect of a functioning organization (Denning, 2005) and most of it is a conscious process. Conversation or dialogue, however, is not the only process that explains group learning.

Theorists like Harris (1995) and Bandura (1982) emphasize the role of modeling and observation in group learning. Particularly, Bandura (2003) says social modeling facilitates high levels of learning. People learn modeled actions by observing others; also, members of a group learn judgements by observing other people. In abstract observational learning, observers extract the principles or standards embodied in the thinking and actions exhibited by others (Bandura, 2003). Effective modeling teaches general rules for dealing with different situations rather than only specific responses or scripted routines (Bandura, 2000).

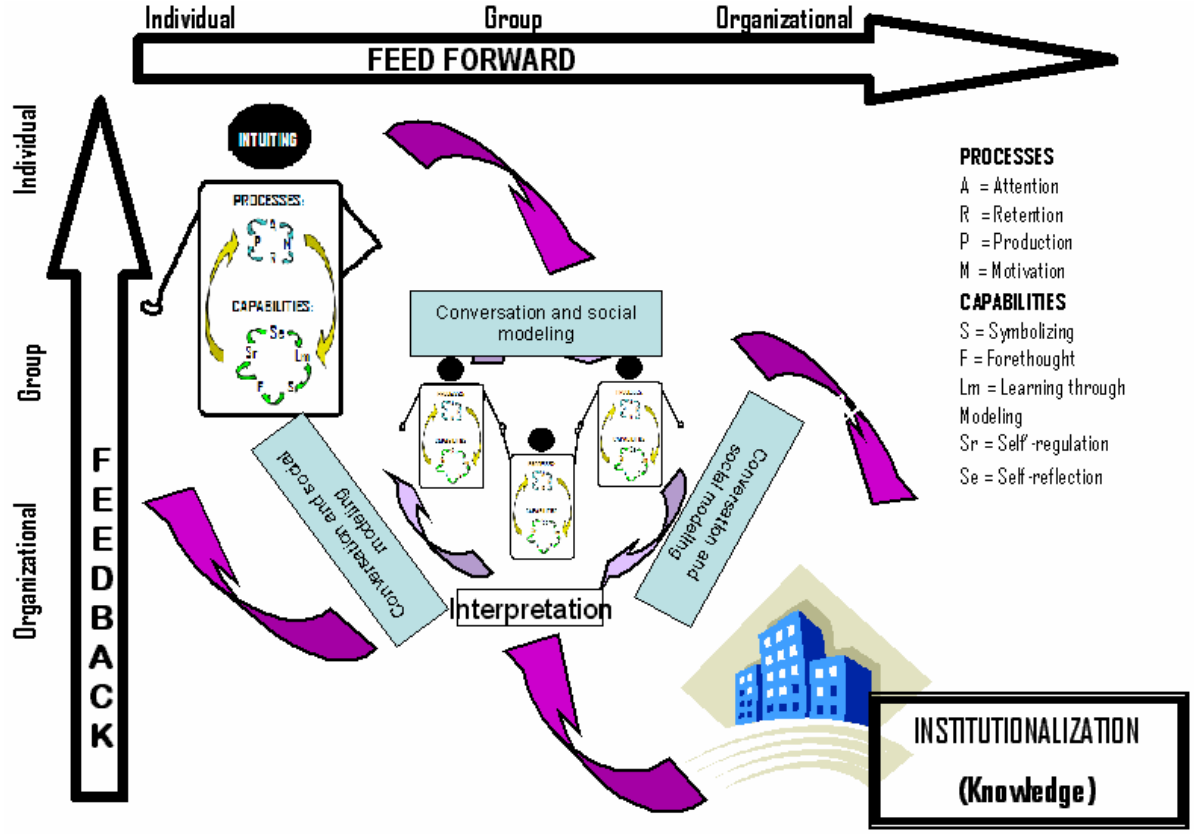

Figure 4: Castaneda and Fernandez extended model of organizational learning

8. Learning processes: A case of knowledge organization in the educational sector

Our example illustrating the learning process is a research being documented by one of the authors of this paper (Castaneda), who is working on the definition of the *teaching-learning-knowledge (TLK) system* in a large private educational institution in Colombia. Examples will be presented of the new concepts introduced at the individual and group levels of the proposed organizational learning model based on the model of Crossan, Lane and White (see figure 4).

At the individual learning level, symbolic capability is demonstrated when somebody listens to a concept like "teaching" and represents it in his mind without observing someone who is actually teaching. Forethought occurs when a participant can imagine the long term organizational benefits of the success of the TLK system. Learning through modelling happens, for instance, when a teacher learns a new technique from a colleague for having participants of a course introduce themselves to each other by observing him doing it. Self-regulation happens when a group member wants to express an idea immediately as it occurs to him during a group discussion but regulates his behaviour by waiting to speak until his partner finishes. Self-reflection occurs when a person asks himself whether he has the capacity to express an idea in an effective manner or not.

Following are some examples of the processes related to individual learning: When a member of an organization focuses in a conscious way on a colleague doing an introducing exercise, in order to learn the relevant characteristics of the technique. Thus he memorizes the objectives, steps and expected results of the technique. Days later, when he is going to use the technique, he employs a production mechanism to recover the knowledge stored in his brain. Finally, because of his motivation, he is ready to apply the technique for introducing the participants in a new academic course.

Members of the technical team constructed the concept of *teaching-learning-knowledge (TLK)* through conversation, as a group. Initially they were working according to the traditional model of teaching-learning, but as the result of some input based on knowledge management concepts from one of the members of the team, discussions brought the group to the TLK concept. Originally the focus was on the processes of teaching and learning and not on how to manage the result, which is knowledge. Now the organization is interested in using knowledge strategically.

The other group process is social modelling. Here is an example: One of the members of the team working on the TLK system is an expert in personal skills development. Members of the team learned the technique by observing their partner applying it in an assertive communication workshop. In summary, the technique follows these steps: 1) showing an individual how to perform the skill correctly, 2) rehearsal of the behaviour by the person being trained, 3) feedback on the observed performance, 4) a second rehearsal of the behaviour, 5) a second feedback on the performance, and 6) homework exercises. When the team members observed their partner applying the technique, they learned how to use it, but at the same time they went a step further, namely deciding to incorporate it as a TLK technique to be used in the development of other skills.

9. Conclusions

In this age of information and knowledge it is indispensable to understand how organizations learn. For this reason models like those of Crossan, Lane and White (1999) and further improvement proposals (Zietsma, Winn, Branzei and Vertinski 2002; Castaneda and Perez, 2005) are welcome. Based on this model it is possible to state that learning occurs at three levels: individual, group and organizations; also, learning takes two routes: from the individual to the organization and from the organization to the individual. In this sense institutionalization of knowledge produced by individuals and groups, as well as learning by individuals and groups of individual key organizational knowledge, are important.

Additionally, Castaneda and Perez (2005) develop a broader concept of individual learning. It is clear that part of individual learning happens as a result of *intuiting*. It is also true that most learning is supported by attention. At the same time, additional processes like retention, production and motivation are necessary to guarantee learning and influence action.

This paper proposes the inclusion of two new processes at the group level. These processes are conversation and social modelling.

Then, a case is presented in order to illustrate the proposed processes in action.

Further study of how these human capabilities and learning processes are manifested in different types of organizations is needed. Additionally, in-depth studies of the group mechanisms of learning are recommended. Crossan, Lane and White (1999) raise the topic of *interpretation*; we proposed the concepts of conversation and social modelling. Research is needed, however, to explain how personal variables like attitudes and self-efficacy as well as organizational variables such as culture and structure influence interaction in learning processes. This could be a way of enriching the model with empirical evidence.

Finally, it would be useful to do transcultural research in order to explain how national culture as a variable plays a role in individual and group behaviour as it relates to organizational learning.

Acknowledgements

We want to thank to Gerhard Reimer for correcting this paper and the students Laura Restrepo and Angee Ospina for their support in the design of the graphic version of the current proposal.

References

Akgün, A. E., Lynn, G. S. and Byrne, J. C., (2003) Organizational learning: A socio-cognitive framework. *Human Relations,* Vol 56*,* No*.* 7, pp 839-868.

Allard-Poesi, F. (1998) Representations and influence processes in groups: Toward a socio-cognitive perspective on cognition in organization, *Scandinavian Journal of Management,* Vol 14, No. 4, pp 395-420.

Argyris, C., Schön, S. (1978) *Organizational Learning: A theory of Action Perspective,* Addison-Wesley, Reading.

Bandura, A. (1965) Vicarious processes: A case of no-trial learning, in L. Berkowitz (Ed.), *Advances in Experimental Social Psychology,* Vol. II, pp 1-55, Academic Press, New York.

Bandura, A. (1982) *Teoría del aprendizaje social*, Espasa-Calpe, Madrid.

Bandura, A. (1983) Self-efficacy determinants of anticipated fears and calamities, *Journal of Personality and Social Psychology,* Vol 45, pp 464-469.

Bandura, A. (1986) *Social foundations of thought and action: A social cognitive theory,* Prentice-Hall, Englewood Cliffs.

Bandura, A. (1991) Self-regulation of motivation through anticipatory and self-regulatory mechanisms, in R. A. Dienstbier (Ed.), *Nebraska Symposium on Motivation,* Vol. 38, pp 69–164, University of Nebraska Press, Lincoln.

Bandura, A. (1997) *Self-efficacy: The exercise of control*, Freeman, New York.

Bandura, A. (2000) Cultivate self-efficacy for personal and organizational effectiveness. In E. Locke (Ed), *Handbook of principles of organizational behavior,* pp 120-136. Blackwell, Oxford.

Bandura, A. (2001) Social cognitive theory: An agentic perspective, *Annual Review of Psychology,* Vol 52, pp 1-26.

Bandura, A. (2003) On the psychosocial impact and mechanisms of spiritual modeling, *The International Journal for the Psychology of Religion,* Vol 13, pp 167-173.

Bandura, A., Jeffery, R. W. and Bachicha, D. L. (1974) Analysis of memory codes and cumulative rehearsal in observational learning, *Journal of Research and Personality,* Vol 7, pp 295-305.

Cangelosi, V. and Dill, W. (1965) Organizational learning: Observations toward a theory. *Administrative Science Quarterly,* Vol 10, No. 2, pp 175-203.

Castañeda, D. (2004) Estado del arte en aprendizaje organizacional, a partir de las investigaciones realizadas en facultades de psicología, ingeniería industrial y administración de empresas en Bogotá, entre los años 1992 y 2002, *Acta Colombiana de Psicología,* Vol 11, pp 23-33.

Castañeda, D. and Pérez, A. (2005) ¿Cómo se produce el aprendizaje individual en el aprendizaje organizacional? Una explicación más allá del proceso de intuir, *Revista interamericana de Psicología Ocupacional,* Vol 24*,* No 1, pp 1-15.

Castañeda, D. and Fernández, M. (2007) Validación de una escala de niveles y condiciones de aprendizaje organizacional, *Revista Universitas Psychologica*, Vol 6, No. 3, pp. 245, 254.

Crossan, M. M., Lane, H. W. and White, R. E. (1999) An organizational learning framework: From intuition to institution, *Academy of Management Review,* Vol 24, No. 3, pp 522-537.

Cyert, R. and March, J. (1963) *A behavioral theory of the firm*, Prentice Hall, Englewood Cliffs.

Daft, R. and Weick, K. (1984) Toward a model of organizations as interpretation systems, *Academy of Management Review,* Vol 9*,* No. 2, pp 284.295*.*

Denning, S. (2005) *The leader's guide to storytelling: mastering the art and discipline of business narrative.* Jossey Bass Ltd Publishers, London.

Duncan, R. (1974) Modifications in decision structure in adapting to the environment: some implications for organizational learning, *Decision Sciences,* Vol 5, No. 4, pp 705-725.

Duncan, R. and Weiss, A. (1979) *Organizacional Learning: Implications for Organizacional Design*, *Research in Organizational Behavior,* Vol 1, pp 75-123.

Easterby, M. and Araujo, L. (1999) Organizational learning: current debates and opportunities, in Easterby, M., Araujo, L. and Burgoyne, J. *Organizational learning and the learning organization: developments in theory and practice,* SAGE publications, London*.*

Easterby, M. and Lyles, M. (2003) *Introduction: watersheds of organizational learning and knowledge management*. 1-15, In Easterby, M., Lyles, M. (eds.) The Blackwell Handbook of Organizational Learning and Knowledge Management, Blackwell Publishing. Oxford.

Easterby-Smith, M., Crossan, M. and Nicolini, D. (2000) Organizational learning debates: Past, present and future, *Journal of Management Studies,* Vol 37, No. 6, pp 783-796.

Fiol, C. and Lyles, M. (1985) Organizational learning, *Academy of Management Review*, *10*, 803-813.

Gioia, D. A. and Sims, H. P. (1986) *Introduction: Social cognition in organizations*, in H. P. Sims and D. A. Gioia (Eds.), The thinking organization: The dynamics of organizational social cognition, pp 1-11, Jossey Bass, San Francisco.

Harris, J. (1995) Where is the child's environment? A group socialization theory of development, *Psychological Review,* Vol 102, pp 458-489.

Hedberg, B. (1981) *How Organizations Learn and Unlearn*, Handbook of Organizational Design, Oxford University Press, Oxford.

Huff, A. S. (1990) Mapping strategic thought, in A. S. Huff (Ed.), *Mapping strategic thought,* pp 11-49, Wiley, Chichester.

Kleysen, R. F. and Dyck, B. (2001) *Cumulating knowledge: An elaboration and extension of Crossan, Lane and White's framework for organizational learning*, Best Paper Proceedings 4th International Conference for Organizational Learning and Knowledge Management, London, Ontario (Canada).

Larson, J. R. and Christensen, C. (1993) Groups as problem-solving unities: Toward a new meaning of social cognition, *British Journal of Social Psychology,* Vol 32, pp 5-30.

Maier, G., Prange, C. and Rosenstiel, L. V. (2003) Psychological perspectives of organizational learning, in M. Dierkes, A. Berthoin, J. Child & I. Nonaka (Eds.), *Handbook of organizational learning and knowledge*, Oxford University Press, Oxford.

March, J. and Olsen, J. (1976) *Organizational learning and the ambiguity of the past*, in March, J. and Olsen, J. (eds), Ambiguity and choice in organizations, 54-68. Universitesforlaget, Bergen.

Martin, L. L. and Clark, L. F. (1990) *Social cognition: Exploring the mental processes involved in human social interaction*, in M. W. Eysenck (Ed.), Cognitive psychology: An international review, pp 195-216, Wiley, London.

Senge, P. (1990) *The fifth discipline: The art and practice of the learning organization*, Doubleday, New York.

Shrivastava, P. (1981) Strategic decision making process: the influence of organizational learning and experience, Doctoral Dissertation, Pittsburg University, Pitsburg.

Tsang, E. (1997) Organizational learning and the learning organization: a dichotomy between descriptive and prescriptive research, *Human Relations,* Vol 50, No. 1, pp 73-89.

Underwood, B. (1982) Studies in learning and memory: selected papers, Praeger, New York.

Virkkunen, J. and Kuuti, K. (2000) Understanding organizational learning by focusing on activity systems, *Accounting, Management and Information Technologies,* Vol 10, No. 4, pp 291-319.

Wang, C. and Ahmed, P. (2003) Organizational learning: a critical review, *The Learning Organization*, Vol 10, No. 1, pp 8-17.

Weick, K. E. (1995) *Sensemaking in organizations*, Thousand Oaks, CA: Sage.

Weiner, B., Graham, S., Taylor, S. and Meyer, W. (1983) Social cognition in the classroom, *Educational Psychologist,* Vol 18, pp 109-124.
Zietsma, C., Winn, M., Branzei, O. and Vertinsky, I. (2002) The war of the woods: Facilitators and impediments of organizational learning processes, *British Journal of Management,* Vol 13 (Special Issue), pp 61-74.

