

Individual, Collective Leadership and Spiral of Knowledge Creation in Organisations

Zaida C. Reis ^a, Cristine H. Nodari ^b, Eric Charles Henri Dorion ^{c*}
University of Caxias do Sul, Francisco Getúlio Vargas, 1130
Caxias do Sul, 95070-560, Brazil

^a zcreis@gmail.com ^b cristine.nodari@gmail.com ^c echdorion@gmail.com

Abstract

Knowledge has been identified as one of the distinctive features that contribute to the competitive advantage of an organization. Also, it appears that the role of leadership within organisations is to provide knowledge for strategic visions, to motivate others, and to effectively communicate information in a collective context. Through the use of the Spiral of Knowledge, of Nonaka and Takeuchi (1997), this theoretical paper proposes a reflexion on new elements associated with the model, such as leadership generation from one individual to a collective level. The intention with this discussion is to put in evidence the themes that study and question these issues in the literature and to stimulate a stronger debate in the academic world, in the quest of new organizational practices.

Key-words: Knowledge creation. Authority. Leadership. Organizational studies.

Introduction

The epistemology of the science of administration becomes necessary when it refers to interdisciplinary knowledge creation. Déry and Audet (1996) state in a historical perspective that the period of the Second World War generated a conducive environment for the development of management, both through the adoption of rules of exception which allowed a more managerial context in war practices and, through the application of various military concepts such as tactics, strategy operations and field logistics. Furthermore, Servant (2001) goes further about the necessity of expanding the frontiers of the organizational studies, stressing that the links between the organizations and society are complex and marked by mutual causalities. He argues that only one logical approach could interpret them satisfactorily, through the dimensions of time, space and culture.

Knowledge creation has become the main capital of a developed economy, where takes place a new system of power, which replaces the old industrial system. Such context makes it increasingly clear that organisations need to acquire knowledge and to learn from different information to become competitive (Morris and Svensen, 1996).

Thus, in a knowledge creation context, each subject receives such new knowledge, make its own interpretation of it and contextualize it with a time and culture framework. Such situation may generate among a group a transitive dissemination process among the participants, justifying the need of human beings to position themselves in a knowledge creation channel, as proposed by Nonaka and Takeuchi (1997), the spiral of knowledge. This proposition, in an epistemological way, suggests a flow of knowledge creation through the

passage of information from explicit to tacit knowledge, most importantly, because of the current actions being made by the participants.

Another relevant reflexion about knowledge, its creation and dissemination, relies on the analysis of organizational authority and its social leadership, since they exercise in their own organizational context and the relationships between its people, different responses about knowledge generation. In such context, leadership may be defined as a process of influencing the actions of the actors of an organization, the choice of the objectives of the group or of the proper organization (Yukl, 1981). Thus, many organizations have come to the conclusion that effective management through the acquisition of knowledge is the only way to leverage their core competencies and achieve competitive advantage.

In a perspective of analysis of the spiral of knowledge creation proposed by Nonaka and Takeuchi (1997), the objective of this theoretical paper is to develop and propose an organizational interpretation of the flows that determine the origin and the evolution of the trajectory of leadership based on the concept of knowledge generation. It also seeks to clarify how they impact on the current conditions from the individual to the group.

The trajectory information to knowledge

To begin this study, there is a need to contextualize the concept of epistemology. The term epistemology seeks to define a general theory of knowledge as a more limited study on the genesis and the structure of science. Such concept, according to Japiassu (1991), has a rigorous and unique meaning, but nevertheless, it is presented with an interdisciplinary character that allows the researcher to build a perception of its own discipline.

The interpretation of such definition shows that the epistemology of the science of administration becomes specific in dealing with interdisciplinary knowledge. In contrast, Chevalier and Loschak (1980) points out that the science of administration is a social science still in gestation, whose object is not a given reality that is apted to be studied. Such claim demonstrates that it needs to be reconstructed in the light of specific theoretical problems and, to be able to meet the scientific criteria, not only it must overcome a number of epistemological obstacles, but it must also develop appropriate analytical tools. In this sense, the science of administration may use the knowledge from other sciences in order to enrich its conceptual tools and perfect its techniques.

To analyze an organizational system always involves daily debates situations for business and society as a whole. For Morgan (1996), the interaction of a system with its environment is the reflection and part of its own organization. It leads to the understanding that the environment is not separated from its system, but in effect is duly part of it. Thus, a complexity based vision needs to approach conflicts between the issues of autonomy and dependence without relying on the exclusion of any of these terms. Consequently, Morin (1982) states that one must learn to think both about order and disorder, working with uncertainty.

Within this analysis paradigm, it is observed that “information” constitutes a set of meaningful data, which is the result of data transformation into something that can be understood either through a specific context, or through a simple meaning. The information proposes a constant updated use, available and relevant; offering organized data organized in a way that makes sense for any encountered finality (Gatewood et al., 2000; Weggman, 1997). A set of information creates issues, materials, texts, events, facts, experience reports, specific features of a topic, the analysis of an event related to any professional or academic educational experience of an individual. The information is available when data is interrelated to a specific context (Kemp et al. 2000; Mills and Goossenaerts, 2000).

An organization is likely to disseminate information more broadly. In that sense, it is logical to recognize the possibility that the information produced by these companies can be valuable, since the use of most of the updated technologies will contribute to support information and storage information. On this view, a first step consists in developing a process that allows the visualization of an information flow, in and out of the organization (Morris and Svensen, 1996). Another goal is to observe how basic information gets into an organisation, and how it can be translated into knowledge for customers, and how it can reach them in a way to fulfill their expectations.

To initiate such reflexion, the expression “knowledge creation” is key. Such term can get various interpretations. First, as a concept which refers to the preparation of a specific action, including the themes in knowledge creation, such as organizational skills, experience and motivations. Second, as a definition that refers to the meaning given to any received information so that a decision maker can act with an established purpose, based on the organisation of such knowledge and following a consistent line of reasoning and thinking (Mills and Goossenaerts, 2001).

Knowledge creation has become the main capital of a developed economy, where takes place a new system of power, which replaces the old industrial system. In that perspective, knowledge overcomes information, in a manner which exceeds data, which explains why organisations need to acquire knowledge and learn from different information available. Such sequence explains why an organisation may choose to sell its knowledge by developing new products, by playing a role in the provision of services and the ability to customize their products (Morris and Svensen, 1996).

The evolution shows that the validity of knowledge is not only through its capacity to monitor and verify facts, but increasingly to the extent that it serves a reflection, a discussion and its incorporation by anyone in their everyday experience.

Another important author, Edgar Morin, considers that you can not isolate by itself the concept of knowledge to deepen its sense. Its definition and understanding must be worked out through a relationship-building process in a macro conceptual framework. To know involves a baggage of informations that is set up to respond to uncertainties, but knowledge is not limited to information, it needs theoretical frameworks to create sense (Morin, 1998).

New knowledge is built upon previous knowledge. The process of knowledge construction is based on sincere "moments", where occur the fusion of different cultural elements, through the analysis and the observation of the "whole" of newly acquired information and synthesis. This last stage represents the knowledge already assimilated with the new ideas, making a final interpretation of such new knowledge. Teixeira Filho (2000) translates knowledge as a whole set of experiences, values and informations that provide to the individual the creativity applied to the evaluation of new experiences and informations. In this light, it is clear that knowledge is inseparable from people.

Explicit knowledge, which is focused by character, is also qualified as formalized knowledge. It is acquired and used to solve a specific task within a context, and represent only the "tip of the iceberg" in an organization in terms of available knowledge. Only a small fraction of knowledge is formalized within an organisation (Nonaka and Takeuchi, 1997; Mills and Goossenaerts, 2000; Manã, 2000).

Tacit knowledge, based on the vision of these authors, is formed by the experience of the individuals of an organisation, along with their training, and represents a substantial step in the decision making of the individual to perform a specific task. Such type of knowledge empower innovation and the ability of the organization's employees to solve problems on a day-to-day basis; while explicit knowledge is linked to databases, patents, procedures and

customer relationships. Explicit knowledge is easily encoded and transmitted. Tacit knowledge presents itself in a more subtle and personal way.

Polanyi (1997) introduces the theme of tacit knowledge from the phrase [...we know more than we can tell.]. By this, he means that much of what is known cannot necessarily be verbalized or written in words. In addition, several laboratory studies show that our intuitive ability to react to external stimuli is not understood by our conscious mind.

With a focus also on the individual and tacit knowledge, Leonard-Barton and Sensiper (1998) relate, in a hierarchical manner, how such type of knowledge might impact on the the innovation process. From lesser to higher impact, these processes could serve the following purposes: problem solving, troubles hooting and, prediction and anticipation. Thus, Teixeira Filho (2000) notes that knowledge is measured by actions provoked, meaning that knowledge is associated with the action led by organisations.

It has been a long time since people use their tacit knowledge within organisations. However, the need to optimize such knowledge became important only recently. Imperato and Harari (1997) stress the importance for organisations to focus more on various types of innovation than market stability. It is perceived that the emphasis of the new workplace is focused on information and knowledge. Intangible capital (collaborative force of employees and managers) is the most important feature of self-sustaining competitive advantage for the organisation.

Companies and individuals depend on the quality of the processes within the organisations, joint with technology, information about customers and suppliers, and their cumulative experience; thus resulting in knowledge. On the other hand, to manage it, to store it, to sell it and to share it has become the most important activity for organisations.

Investment in manufacturing technology creates a complex problem within organizations, which from Mohanty (1999), involves a lot of organizational learning. An organisation has the need to structure itself to create or acquire knowledge and, to make decisions about the use of such new knowledge, seeking to enhance its insight into the analysis of new suggestions. It is important to observe and to assess collective learning, because in these situation occur a concentration of knowledge.

When an error is found out and corrected, it will involve modifications in the objectives, the policies and the standards; from where an organization can develop mechanisms for continuous learning and relearning, creating strategic initiatives.

To initiate such process, Mohanty (1999) suggests that the basic dynamic with successful organisations relies on investing in people's development; more specifically in analysing their ability to solve problems, make effective decisions that contributes to a company's growth.

The construction of organizational knowledge is interactive and evolves dynamically, promoting changes in behaviour, attitude and in the implementation of new values, both by the individual as well as the organisation. The ability to make good use of such knowledge will bring leadership in the market.

Imperato and Harari (1997) and Senge (1999) insist on the strategic management level of job satisfaction. They consider that each manager is committed to creating a work environment where the right people (committed to the vision and desired culture, with compatibility between personal and organisation values) are satisfied. Also, they believe that success in a knowledge-based economy depends on new skills, new style of management, resulting in the necessity to reshape an organisation.

Senge (1999), makes a valuable contribution in the same direction, arguing that organizations constitute a learning field only through its individuals, not because individual learning is the garanty for ensure that individual learning warrants organizational

learning, but only because no organization can generate knowledge without them. Then, the ability of an organization to generate knowledge is mainly based on its employees, suppliers and customers, and to incorporate it into new products, services and systems.

The capacity that some companies have to create new knowledge, circulate it among their employees, suppliers and customers, and incorporate it into their products, services and systems, create organizational knowledge. In this context, it is necessary to specify that such creation is a continuous and dynamic interaction of tacit and explicit knowledge (Nonaka and Takeuchi, 1997).

In this view, the authors introduce Japanese companies as firms that have understood the creation of knowledge as a key organizational feature to generate innovations continuously, because it brings these organisations to competitive advantage. Please note that context generates two possible flows of innovation, first from the inside out, as an internalization process, or from the outside in, as outsourcing.

However, a key question surges: Who is responsible for the act of creating new knowledge in an organisation?

Nonaka and Takeuchi (1997) report that there is a reflexion path toward complexity, suggesting that no group or department is specifically responsible for such activity, since it has a collective "DNA". It is precisely at this point that Nonaka and Takeuchi (1997) justify the need for a manager to direct this phenomenon that incentivate and generate knowledge creation and management, thus causing the recycling of organizational value.

The Paths of Authority and Leadership

This historical understanding makes it increasingly clear that organizations increasingly need to acquire knowledge and learn from different information sources. Since, knowledge creation is considered as one of the important features that contribute to the competitive advantage of an organization and knowledge management is characterized by a competitive horizon driven by globalization, technology, deregulation and leadership (Halal and Taylor, 1999).

The need for exposure, velocity, flexibility and adaptability of organisations make the learning and innovation processes drive the development of organisational competitive advantage (Eisenhardt, 1989 and Prusak, 1996). For example, firms in developed economies sustain superior performance, based on knowledge management strategies, promoting a faster learning process (Child and McGrath, 2001), and therefore giving new challenges for their leaders (Schneider, 2002).

In addition, there are extensive researches (Hater and Bass, 1988, Manz and Sims, 1986) which state that leadership usually generates high organizational performance and job satisfaction, organizational commitment and internal trust. Since the post-industrial era, the success of organizations is based more likely through its human assets and their learning ability than their physical assets (McKelvey, 2001, Quinn et al. 2002).

Leadership is broadly defined as a process of influence on the actions of followers, such as the choice of the objectives and strategies, within an organizational context, (Yukl, 1981). Being related to the process and the influence of the direction, it involves implications related to the commitment of people, an unequal distribution of power and the ability to transmit its ideas.

In this context, the concept of leadership is based on relationship building, generating a constant need to establish networks, to listen and act on incoming messages from the people around (Hersey and Blanchard, 1978). Knowledge leaders encourage members to contribute to the organization through constant contact, building relationships, encourage the

recognition of individual contributions, and providing avenues of opportunities for growth and development (Ritchie and Martin, 1999).

Bonner (2000) believes that leaders motivate people, ensuring that their audience can relate to organizational visions, such as process development or stakeholders network development. Consequently, it appears that the leader's role is to provide knowledge based strategic visions, to motivate others, to communicate effectively, to act as an agent of change, as well as to fulfil the agenda of knowledge creation and development.

On the other hand, it is important to contextualize the differences between leadership and authority, in an organizational context and through people's relations. The concept of authority can be related to a task such as management. According to Dusilek (1987), to be the boss is to lead and achieve goals through human and material resources. It is to lead people to act with effort and dedication to achieve the desired goals. The responsible manager is formally established. It happens through a bureaucratic act. A leader does not always have formal authority. The boss will command his subordinates to do specific tasks and to achieve particular goals, using the hierarchical authority in the organisation. But the leader will lead his people to achieve the same goals with greater efficiency and effectiveness by getting to keep his team motivated and cohesive.

Then, leadership happens in a context of goal-oriented groups. The leader also plays an important symbolic function for determining a social group defined and led by interacting stakeholders, involving a process of defining the reality in a way that raises awareness, involving a relation of dependency (House and Baetz, 1979). Given a global competitive environment, a leader must create a social architecture capable of generating intellectual capital within a specific context, to obtain performance at its maximum efficiency, responding appropriately and quickly to change. To such understanding can be included the analysis of leadership and authority through the notion of power and how it has the ability to influence these elements. It is understood by the notion of power the competence that a specific group of people have to define and achieve their economic, political and ideological objectives (Gorz, 2005).

Srouf (1998) defines the concept of power as the means by which conflicts of interest are ultimately resolved. Power influences who gets what, when and how. The power sources are rich and varied, providing those who want to go and act, pursuing their interests in many ways to do so. These power sources are used to model the dynamics of an organizational life such as formal authority, use of organizational structure, rules and regulations, decision making process control, knowledge and information control, or technology control among others. According to Morgan (1996), the generation of power comes from an individual or a collectivity which is able to structure common interest in an organization on certain issues, in a way that effectively defines the reality of the decision-making process.

Such thoughts draw attention about the fundamental importance of access to information and knowledge creation as sources of power. But, recent researches demonstrate a tendency for management effectiveness through situational leadership (Rotemberg and Saloner, 1993; McKelvey, 2001). Such argumentation is about the conditions that determine the effectiveness of a leader, which may vary depending on organizational elements of two natures. The first being deterministic, and refers to business reality. It considers elements such as the current business situation and its organizational environment. The second nature is strategic, involving elements such as the manager's tasks to be performed, his professional and personal qualifications, his expectations about his subordinates and his past experiences as a leader.

Thus, the contingent nature of leadership involves a constant change in the interaction of elements that lead to people, their structure of work and their capacity to generate knowledge, individually or collectively.

Reflections on the generation of organizational leadership from the analysis of individual and collective contexts

As presented in Figure 1, the first step represents the socialization phase, where a firm goes through an interaction process where experiences and individual mental models are shared. In the phase of externalization exists a dialogue between participants, generating a collective reflection, with the use of some significant analogies or metaphors that help the team members capture the hidden tacit knowledge.

The third phase, referring to the combination moment, consists in the addition of new knowledge to the existing one, generating a new interpretation of the reality, or an improvement of previously acquired knowledge. Finally, the internalization phase is nothing less than putting learning into practice, forming the idea of "learning by doing ". It constitutes the epistemological form of organizational knowledge creation, more specifically, the formation of individuals' tacit knowledge as the basis of knowledge creation within an organisation, focusing on different ways to convert such knowledge.

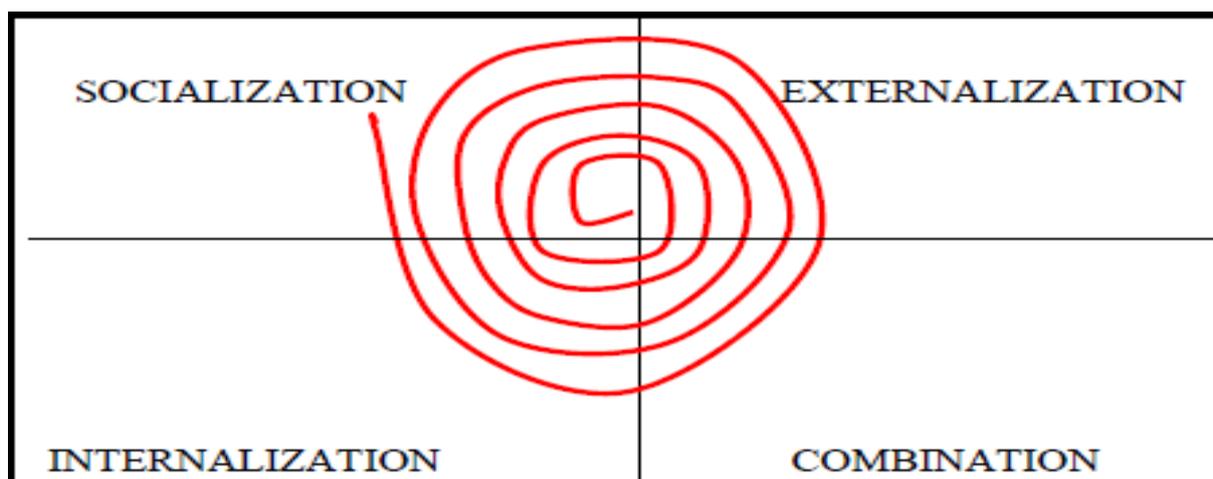


Figure 1 – Knowledge Spiral
Source: Nonaka and Takeuchi (1997).

Thus, the creation of organizational knowledge is a process that begins at an individual level, spreading both inside and outside the organisation, since it is understood that a company's knowledge only exists through the ontological view of knowledge, which states in a restricted manner, that knowledge is only created through individuals. The Figure 2 shows a process that demonstrates such fact.

That is from the moment that researchers realized that to manage knowledge, it is important to understand, organize, control and profit from this intangible (knowledge). The construction of knowledge, which occurs through the combination of participants' individualities with a set of activities, enables innovations. Organisations can learn how to use this such of growth, applying it its strategy.

The authors Hamel and Prahalad (1999) argue that an organisation needs to agree that its strategy cannot gain force by only reducing its scope, thinking it shall increase its efficiency. An organisation also needs to re-evaluate its core strategies, reinventing its core competence, its main differential.

Nonaka and Konno (1998) suggest a more contextualized platform, including the organisational reality and its processes. It refers to the actors and their emotional intelligence, the organisation and its technical knowledge and business, growth, make things happen and to establish relationships.

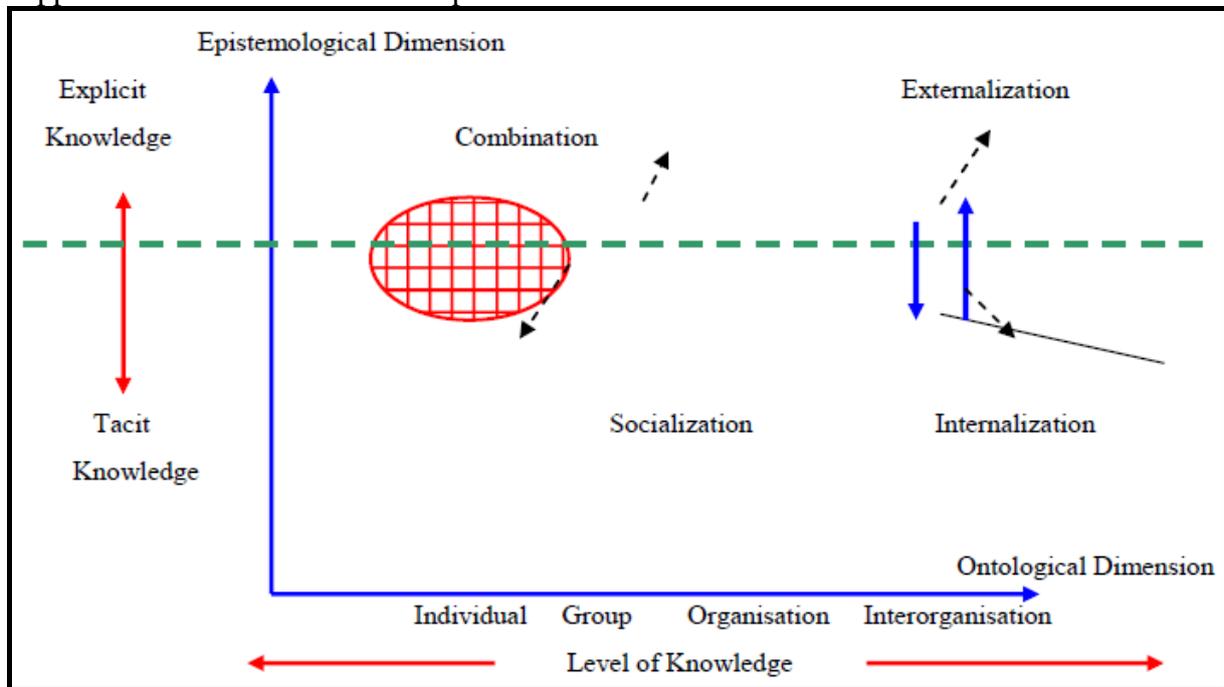


Figure 2 – Spiral of Organizational Knowledge Creation

Source: Nonaka and Takeuchi (1997).

The "strategic skills", so called by Leonard-Barton (1998), or core competencies, presented by Hamel and Prahalad (1999) increase as the actions of the employees of an organization increase. In this sense, the manager's main tasks are to identify, deploy and expand the activities that generate knowledge.

In a more specific context, it can be understood that many skilled workers can create unproductive conflicts and personal disputes. A sharp manager will try to precede such situations and encourage the integration of the collective skills, which will generate organizational value. Hamel and Prahalad (1999) note the importance of active employees who have numerous ideas and share them, seeking to improve their individual and group work, aiming at a positive outcome for the company.

From this theoretical essay, it is understood that it is possible to study knowledge creation from a different context, focusing on the construction of leadership based on knowledge, in the view of a combined perspective in an individual to a collective path, as presented in Figure 3. In an empirical perspective, it can be understood that there is no a priori knowledge: all knowledge is the result of cognitive experiences (Nonaka and Takeuchi, 1997). Such reflexion leads to the fact that knowledge cannot be dissociated from the individual; it is a personal trait that makes sense only when applied to groups.

It was first developed a theoretical framework, based on the analysis of the individual and the group, through the creation and the interaction of knowledge, initially analyzed by two types of contextual parameters; the trajectory of development of information into knowledge, and the path of leadership development and authority.

In this interpretation, the individual within an organisation, share its practices, generating information into the organizational context. Although, the most appropriate way

to maintain this practice rests with the renewal of organizational climate that provides an adequate interaction.

To make this happen, a subject can transform such information in organizational authority, through some methods of knowledge representation, and hence to appropriate it and learn about the specific practice. It is a fact that some individuals develop better capabilities for creating, leading members of a group to a degree of legitimacy and creation, increasing their expertise and provoking socialized knowledge, the essence of leadership.

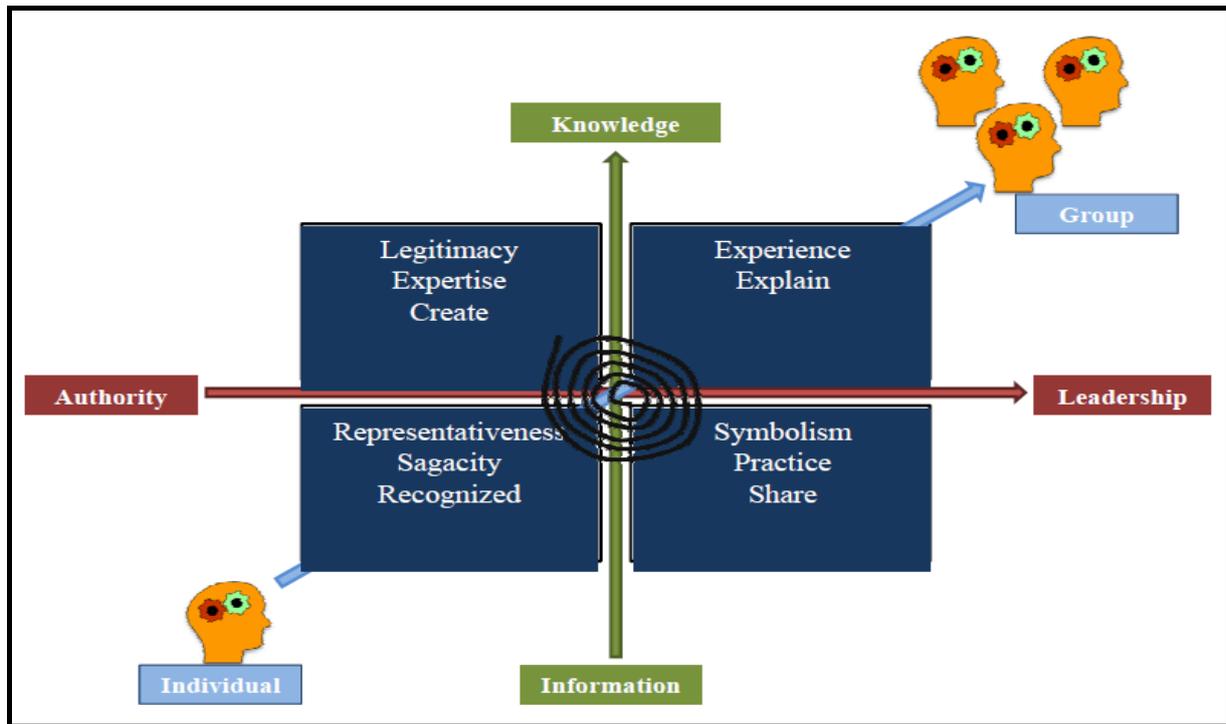


Figure 3 – The spiral of generation leadership based on knowledge.
 Source: Authors elaboration.

Based on such association, individually and in groups, people can interact and “live” their experiences, explaining to the other stakeholders the different ways of interpreting knowledge as well as, in an individual manner, each person can effectively convey with the collective practices, which can generate in a degree of leadership.

The analysis demonstrates that different management approaches can be developed, by the construction of knowledge based leadership, from an individual to a collective path, where it is assumed that knowledge cannot be dissociated from the human being: considering it as a competence that only makes sense when applied to collective actions. In this context, an individual being part of an organization, who shares its business practices, generates information within the organization. However, it shows that the most appropriate way to maintain this practice renewal rests within the organizational climate, which provides the necessary and adequate interaction. Consequently, the individuals who develop more efficiently their creative capacities, brings them to a degree of legitimacy, increasing their expertise and socialized knowledge creation. Based on this association, individually and in groups, people interact and share their experiences, showing to the others different forms of interpreting knowledge. A person who effectively transmits his practices into the group can generate a certain degree of leadership within the organizational context.

Finally, such exposition and argumentation emphasize that the importance of the individual performance in a process of knowledge management lies in the fact that people are

the locus of what is pretended to be managed, making them even more essential, considering they should be understood as key elements in the analysis of an organization to achieve competitive advantage in a perspective of knowledge generation. Thus, it is possible to determine that the generation of leadership, which is evidenced mainly in groups, involves a combination of elements and characteristics that follow the model of Nonaka and Takeuchi (1997).

Conclusion

The objective of this research was to provide different points of view on organizational knowledge creation, using the tool proposed by Nonaka and Takeuchi (1997), from an external environment; leadership generation and authority. A theoretical framework, based on the analysis of the individual and the group in interaction with knowledge, initially examined two specific parameters of analysis: a) the course of development of knowledge from information, and b) the path of authority to leadership.

Therefore, based on the spiral of knowledge proposed by Nonaka and Takeuchi (1997), three specific paths of analysis can be considered. The first relies on the external context of knowledge generation as a continuum from the axis of information into knowledge; the second, from a level of authority into a condition of leadership, and third, from the individual perspective into the collective reality.

The proposed model makes possible to highlight the importance of such organizational issue. As Morgan (1996) points out, the interaction of a system with its environment is a reflection and the starting point of your own organization, considering that an individual, with his personal skills and knowledge interacts with the organisation, forming a new knowledge. This means that it can generate motivation factors for leadership, because the trajectory developed from the knowledge spiral can provide the highlights of an individual within a specific group. In this sense, according to the question of authority, the new actual leader may conquer the group and provide stability in the organizational processes. On the other hand, an authority dissociated from knowledge generates climate and pure sovereignty of power, provoking an authoritarian management situation, which prevents the development of knowledge based collective leadership.

Therefore, with such reflexion, an alternative interpretation of the spiral of knowledge is established. It helps building an organizational context for the element of leadership from the foundations of collective knowledge creation and development. From an epistemological perspective, it lays the paths for such particular confrontation of the themes; demonstrating that organisations have to become pro-active to develop unique perceptions about their conduct with the generation of knowledge and, how this may influence the generation of leadership on individual and the group.

On the other hand, there are still many companies which do not respect and value their internal wealth of knowledge, generated by its team, and therefore, may demotivate the knowledge leaders and the group. Such organisations tend to have a reactive path with its processes and become ill prepared to react to changes occurring in the market. Most of the time, these organisations find it difficult to understand the moves of competitors, resulting in an inability to position itself and establish a clear differential. A lack of organizational adaptability is the consequence of not generating a vision of creation and innovation.

It is also possible to perceive that such company profile rather use of authority to impose transmit their ideas instead of leadership, which inhibits the creative participation of the member team, limiting the innovative flux to happen within the organisation.

Within this context, the construction of knowledge-based leadership includes the strategic relationship between the acquisition of knowledge and the business processes and

functions; from the individual to the collective context, supporting and facilitating employees to acquire and share knowledge creating organizations devoted to the development of a community.

For future research, an approach that generates a conceptual model for the analysis of these organizational elements, and thus bringing another tool to select new leaders, distinguished by knowledge management.

Such research offers future thoughts on the existing literature and the necessity to stimulate debate in the academy about organizational studies.

References

- Audet, M; Déry, R. (1996) La science réfléchiée. Quelques empreintes de l'épistémologie des sciences de l'administration. *Anthropologie et Sociétés*, v. 20, n. 1.
- Bonner, D. (2000), Knowledge: from theory to practice to golden opportunity, *American Society for Training & Development*, September-October, pp. 12-13
- Child, J. and McGrath R.G. (2001), Organizations unfettered: Organizational form in an information-intensive economy, *The Academy of Management Journal* 44 (6) (2001), pp. 1135–1149.
- Dusilek, N.G. (1987) *Liderança cristã: a arte de crescer com as pessoas*. Rio de Janeiro: Juerp.
- Eisenhardt, K. (1989) Making fast strategic decisions in high-velocity environments, *Academy of Management Journal*. pp. 543–576.
- Gatewood, R.D. et al. (2000) Management: comprehension, analysis and application. In *KM – Fórum European*, 2000, Europa. Anais. Europa.
- Gorz, A. (2005) *O imaterial*. São Paulo: Annablume.
- Halal, P. (1998) In: W.E. Halal, Editor, *The infinite resource: Mastering the boundless power of knowledge*, Jossey-Bass, New York.
- Halal & Taylor (1999) In: W.E. Halal and K.B. Taylor, Editors, *Twenty-first century economics: Perspectives of socioeconomics for a changing world*, Macmillan, New York.
- Hamel, G.; Prahalad, C.K. (1999) *Competindo pelo futuro: estratégias inovadoras para obter o controle do seu setor e criar os mercados de amanhã*. Rio de Janeiro: Campus.
- Hater, J.J, Bass, B.M. (1988), "Superior's evaluations and subordinate's perceptions of transformational and transactional leadership", *Journal of Applied Psychology*, The Australian National University, Canberra, Vol. 73 No.4, .
- Hersey, P.; Blanchard, K. (1978) *Psicologia para Vida Familiar: Uma abordagem para a vida familiar*. São Paulo: EPU.
- House, R. J.; Baetz, M. L. (1979) Leadership: Some Empirical Generalizations and New Research Directions," in Barry M. Staw, ed., *Research in organizational behavior*, Vol. 1. Greenwich, CT: JAI Press, pp. 341-423.
- Imparato, N.; Harari, O. (1997) *A Grande Virada: inovação e escolha estratégica em uma era de transição*. Rio de Janeiro: Campus.
- Japiassu, H. (1991) *Introdução ao pensamento epistemológico*. 6. ed. Rio de Janeiro: Francisco Alves.
- Kemp, J. et al. (2000) KM Terminology and Approaches. In: *KM – fórum European*, Anais Europa.

- Leonard-Barton, D. (1998) *Nascentes do Saber: criando e sustentando as fontes da inovação*. Rio de Janeiro: Fundação Getúlio Vargas.
- Leonard-Barton, D. Sensiper, S. (1998) The Role of Tacit Knowledge in Group Innovation. *California Management Review*, vol. 40, n. 3, pág. 112-132.
- Manz, C.C.; Sims, H.P (1986), "Beyond imitation: complex behaviour and affective linkages resulting from exposure to leadership training models", *Journal of Applied Psychology*, Vol. 71 No.4, pp.571-8.
- McKelvey, B. (1995) Energizing order-creating networks of distributed intelligence, *International Journal of Innovation Management* , pp. 181–212.
- Miles, R.E. (1998) *The spherical network organization*. In: W.E. Halal, Editor, *The infinite resource: Creating and leading the knowledge enterprise*, Jossey-Bass, San Francisco. pp. 111–121.
- Mills, J. J. (2000), Goossenaerts, J.T. Information and Knowledge in Product Realization Infrastructures. In *KM – fórum European*, 2000, Europa. Anais. Europa.
- Mohanty, R.P. (1999) Evaluating manufacturing strategy for a learning organization: a case. Universidade Presses: IJOPM.
- Morgan, G. (1996) *Imagens das organizações*. 1. Ed. São Paulo: Editora Atlas S.A.
- Morin, E.(1982) *Ciência com consciência*. Lisboa: Europa-América.
- Morris, S.N.; Svensen, J.M. (1996) *Knowledge Manager: Adding Value in the Information Age (Future skills)*. United Kingdom: Financial Times/ Prentice Hall.
- Nonaka, I.; Takeuchi, H. (1997) *Criação do Conhecimento na Empresa*. Rio de Janeiro: Campus.
- Nonaka, I.; Konno, N. (1998) The concept of "ba": Building a foundation for knowledge creation. *California Management Review*; Berkeley; Spring.
- Polanyi, M. (1997) The Tacit Dimension, in: Laurence Prusak (ed), *Knowledge in Organizations*. Butterworth-Heinemann, Newton, MA.
- Prusak, L. (1996) The knowledge advantage, *Strategy & Leadership*. pp. 6–8.
- Quinn et al., (2002) Managing professional intellect: Making the most of the best. In: S. Little, P. Quintas and T. Ray, Editors, *Managing knowledge: An essential reader*, Sage, London, pp. 335–348.
- Ritchie, S.; Martin, P. (1999), *Motivation Management*, Gower, London.
- Rotemberg, J.; Saloner, G. (1993) Leadership Style and Incentives. *Management Science*, November 39(11), pp. 1299-318.
- Schneider M. (2002) A stakeholder model of organizational leadership. *Organization Science* 13 (2), pp. 209–220
- Senge, P. M. (1999) *A Quinta Disciplina*. São Paulo: Nova Cultural.
- Serva, M. (2001) O fato organizacional como fato social total. *Revista de Administração Pública*, v. 35, n. 3, p. 131-152.
- Srour, R. H.(1998) *Poder Cultura e Ética nas Organizações*. 8. ed. São Paulo: Editora Campus.
- Teixeira Filho, J.(2000) *Gerenciando Conhecimento: como a empresa pode usar a memória organizacional e a inteligência competitiva no desenvolvimento de negócios*. Rio de Janeiro: Editora Senac.
- Yukl, G.A (1981), *Leadership in Organisations*, Prentice-Hall, Englewood Cliffs, NJ.