THE RELATIONS BETWEEN ORGANIZATIONAL LEARNING AND INTRANET IN A VOCATIONAL EDUCATION INSTITUTION

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Abstract

The ability of companies to create knowledge, disseminate it in the organization and incorporate it into their products and services relates to the organizational learning process. Accordingly, the present study analyzed the use of intranet in the commercial sector of a vocational education institution. The methodology used is qualitative and exploratory. The authors carried out interviews, and transcribed and analyzed the data according to the theoretical background. The results indicate that an intranet is an essential tool for organizational learning, to the extent that its members acquire new knowledge and are aware of its application in the company as a potential for development.

Keywords: Organizational learning. Knowledge management. Intranet.

1. Introduction

Learning is a process of human development and knowledge, as declared by Drucker (1998), constitutes one of the most important (if not the most important) competitive asset at organizations. Without knowledge, there is no way to sustain the capability to act in a world under constant changes, with performance considered primal to economic, social and cultural development inside organizations (CARVALHO, 2012). In this context, organizational learning becomes more significant and more relevant to a strategic process for maintenance and organizational competitiveness through learning.

One of the broader definitions for organizational learning comes from Fiol and Lyles (1985), who assert that it is a process, which allows improvement and development of organizational actions through the acquisition of new knowledge and better understanding on learning forms in the organizational environment.

Nevo, Furneaux, and Wand (2007) observe that organizational learning must accomplish three focal points: people, strategies and information technology. According to those authors, these aspects underline organizational learning in the 21st century.

Studies performed by Igarashi (2009) reveal that information technology is a known tool that levers, supports and conducts organizational learning. Among technologies capable of contributing to organizational learning, Rodrigues and Marques (2007) highlight intranet, capable of reaching a high number of people instantly, even with restricted access only to organization members.

Otherwise, deepen the knowledge related to the intranet as a tool that favors knowledge building on organization employees becomes relevant to the reach of organizational objectives (NONAKA; TAKEUCHI, 1997). Therefore, the goal of this paper is to analyze the possibilities of organizational learning originating from intranet use in the commercial sector of a vocational education institution.

For this purpose, understanding how people build, store and share knowledge through technology such as intranet is critical so that interaction with the organizational learning exists.

2. Organizational learning: concepts, types, and levels

The theme of organizational learning has been a study object of several authors since the 1950s. However, upon analyzing the vast literature on the subject, one can observe that it consolidated itself as an independent study field only from the 1970s onwards.

Argyris and Schön (1978) gave one of the most important contributions to this theme. They consider organizational learning as a process and as a result, having an original premise the development of strategies and procedures continuously built to achieve better results. As such, it is the necessary active participation of people in the acquisition and sharing process of knowledge. This concept has been the current study groundwork on the subject.

Methodological notions and differing points of view of several authors who have researched on organizational learning resulted in definite opinions on this matter. In the international field, highlight authors such as Argote and Miron-Spektor (2011), Crossan and Apaydin (2010), Fiol and Lyles (1985), and Nonaka and Takeuchi (1995). Delving into the national sphere, have Antonello (2005), and Loiola and Bastos (2003). That way, the search in literature for authors who developed this theme leads to find many systematized concepts and definitions throughout this article.

The concept of organizational learning is complex and seeks to explain the resulting learning of interaction between individuals in organizations. It bases on the premise that an organization, as an entity, is capable of collective thought for learning (ANTONELLO, 2005).

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

Learning is a mental process that results from human attempts to understand certain present aspects in a social environment, being responsible, consonant to repercussion and circumstances, by production of individual, collective and organizational knowledge. Traditionally, any of these knowledge forms usually results in the process of constructive redevelopment of socially shared understandings. Since subjectivity guide existence and human interaction, these new elaborations are hardly standardized (BURNHAM et al., 2005).

Under the vision of Antonello (2005), learning in an organization is infinite, for process continuously change and, with that, learning must be continuous. The process of learning is endless and, therefore, the organization that learns holds the skills for creation, acquisition, and transformation of knowledge.

In the same way, Argote and Miron-Spektor (2011) consider that organizational learning occurs from three sub-processes: creation, retention, and transfer of knowledge. Given that creation happens when a unity generates knowledge new to it; retention is related to knowledge storage and flows relative to organizational memory; and transfer occurs when organizations learn directly from their own experience and, indirectly, from the experiences of others.

In his studies on the subject, Antonello (2005) presented the organizational learning web, demonstrating six aspects of this theme comprehension. Change is a common point in the process of organizational learning, as shown in Image 1.

Image 1 - The learning web: emphasis adopted in organizational learning literature
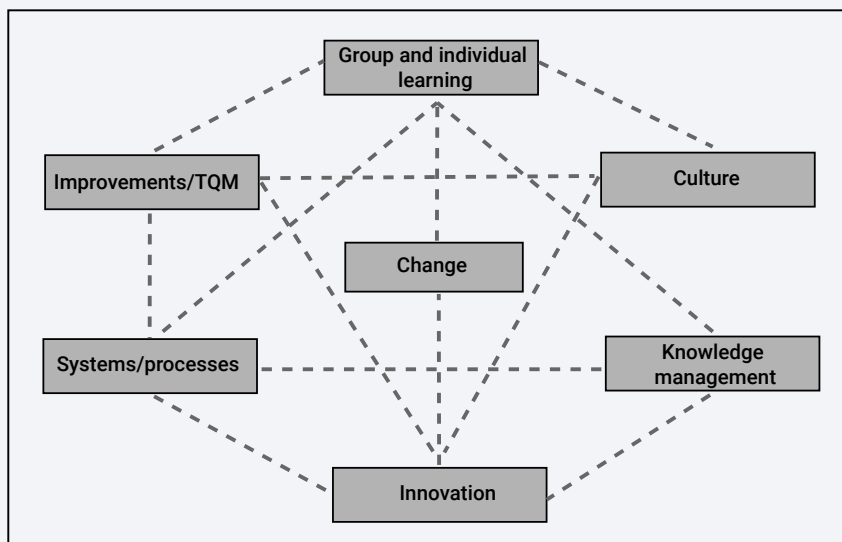
Source: Antonello (2005, p. 17).

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

One can notice, from this web, that several factors such as individual and collective learning, process-system, culture, knowledge management, continuous improvement, and innovation are interlinked and involved by a broader perspective originating from the notion of change. Consequently, the concept of organizational learning can be the individual knowledge shared by everyone who is engaged in the organizational performance.

To Igarashi (2009), collaborative relationships build organizational learning with the intention to align knowledge diversity, experiences, capabilities, and means of doing things that people and communities have and use, being necessary to transform individual capabilities in organizational capabilities.

In that sense, according to Antonello (2005), the perspective of change within the context of organizational learning is relevant because it presents as dynamic and integrating. Organizational learning is associated to change, intentional or not.

Different kinds of learning seek to express learning in organizational context. Argyris and Schön (1978) propose two kinds: simple loop learning and double loop learning, as shown in Image 2.

Image 2 - Single and Double Loop Learning
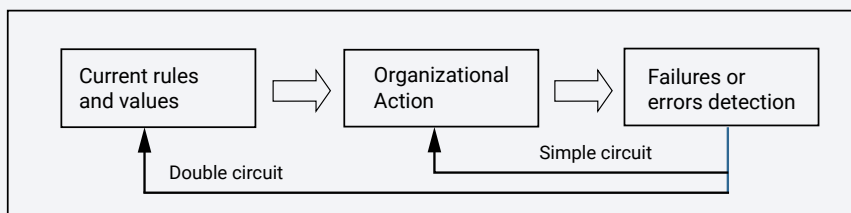
Source: Argyris and Schön (1978).

According to Argyris and Schön (1978), single loop learning bases on error detection and its correction. However, preserving the preconditions in the operating system in which new behaviors developed in the scope of current norms and objectives in companies, without questioning them. Notwithstanding, double loop learning is the basis of innovation, considered as a higher level of learning and, insofar as it implies in changing the norms, it allows correction of errors, just like an intervention on originating causes of errors as a result of an organizational reflection.

In turn, Souza and Trez (2006) consider the existence of three types of learning: single-loop, double-loop, and *deutero*. For these authors, single-loop learning occurs from the identification of problems in the environment, on strategy development to deal with them and implementing those strategies. Double-loop learning results from an action that seek to correct previous results from the examination of system foundation principles and *deutero-type* learning characterize the process or the capability of "learning to learn" and corresponds itself to the organization intelligence. This type of learning supposes the understanding of the two previous types with the objective or making internal relations clearer and enhance change in the organization.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

Burnham et al. (2005) argument that single-loop learning relates to the instrumental process, which changes action orientation and underlying suppositions to strategies without raising changes to action theory level. They are situations that add knowledge and practice without taking fundaments changes that sustain daily routine. Double-loop learning refers to learning the underlying changes in suppositions of in-use theory, for example, values, strategies, and policies. It is two-cycle learning that relates observed effects from the action with action values, objectives and plans, implying in critical reflection and organizational theory changes. For this reason, it is a higher level of learning, constituting a kind of questioning of organizational values that guide action strategies and norm adjustments and incompatible procedures with the effective functioning of processes.

The organization recognizes the possibility of learning and seeks to capacitate itself, so that knowledge becomes a reality

In turn, *deutero-learning* brings learning of second order. Argyris and Schön (1996) consider that this kind of learning involves the remaining and bases itself on the supposition that the organization recognizes the possibility of learning and seeks to capacitate itself, so that knowledge becomes a reality; the organization seeks "learning about learning". That is, on top of registering changes of first and second level, it also embeds reflections and questionings about these learning contexts, as well as about other ontological experiences of production and application of organizational knowledge with the intention of signaling facilitating and inhibiting situations.

Beyond learning types, Fleury and Fleury (2006) present the distinction of the learning process in three levels, detailed below:

- Individual: the process of learning occurs first at the individual level, sustained of positive or negative motions, through diverse ways.

- Group: learning can come to consolidate itself in a social and collective process. To understand is necessary to observe how the group learns, how it combines knowledge and individual beliefs interpreting and integrating them into collectively shared schemes. Those can constitute in orientation for actions, and the will of belonging to the group can constitute a motivational element to the learning process.

- Organizational: the process of individual learning, of sharing of comprehension and interpretation by the group, becomes institutional and expressed in several organizational artifacts: structure, rules, procedures and symbolic elements; organizations develop memories they retain, recover information and broadcast them to the remaining.

Thus, the process of learning also differs depending on the setup, that is, in individual, group or organizational form, as described by Fleury e Fleury (2006).

In turn, Crossan, Lane, and White (1999) consider that organizational learning is a dynamic process composed by four steps, known as the "4 Is": intuition, interpretation, integration, and institutionalization, presented on the next page.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

a. Intuition relates to experiences, images, feelings, and metaphors;

b. Interpretation relates to language, cognitive maps, and dialogs, that is, it is how people communicate in the organization and interpret received and transmitted data;

c. Integration corresponds to shared comprehension, to mutual adjustments, and to interactive systems. They are the ways of the interaction of people in the environment;

d. Institutionalization is relative to routines, systems, rules and procedures that constitute the company in which the individual is part.

Crossan, Lane, and White (1999) sustain that those organizational learning steps must be in three different levels: individual, group and organizational as shown in Image 3.

Image 3 - Organizational learning process
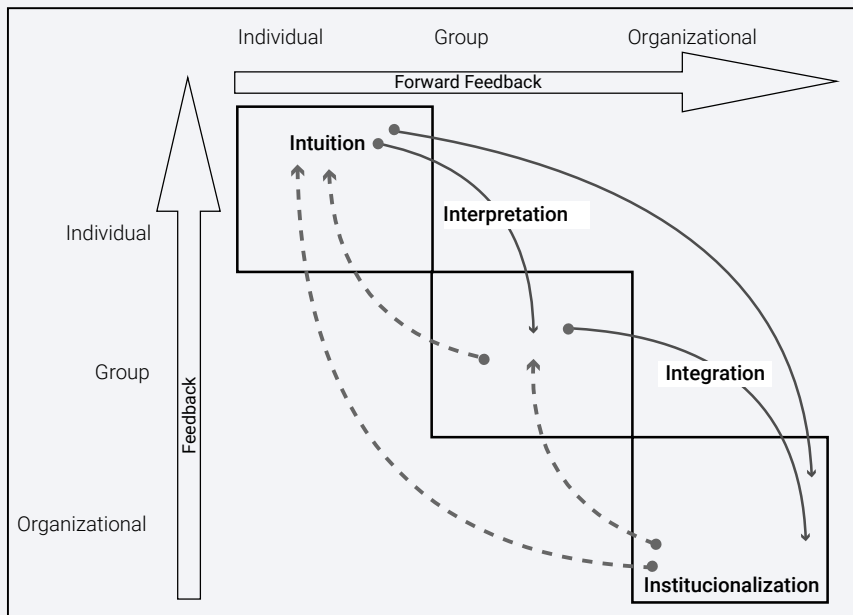
Source: Crossan, Lane, and White (1999, p. 532).

On that account, according to Crossan, Lane, and White (1999), the intuition and interpretation occur at the individual level; interpretation and integration occur at the group level; and integration and institutionalization held at the organizational level. Chart one presents the four steps of the learning process and the three organizational levels.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

Chart 1 - Learning process - levels and steps

Level	Steps	Input	Output
Individual	Intuition	Individual experiences and images	Personal insights
	Interpreting	Language and metaphors	Shared dialog
Group	Interacting	Negotiated actions Interactive systems	Cognitive maps
Organizational	Institutionalization	Roadmap actions Rules Procedures	Knowledge systems

Source: Crossan, Lane, and White (1999).

At the individual level, intuition occurs through individual experiences and images, being it possible to influence intuitive insights from the individual. However, it only affects other people when there is interaction. Interpreting relates to language and metaphors, to the form of interpreting insights through which shared dialog allows comprehension of natural patterns, therefore favoring learning. At the group level, integration consists of the development of comprehension, of interaction between individuals in search of negotiated actions, favoring interpretation through means of dialog and cognitive maps. In that sense, institutionalization is the process of implementing learning that occurs through organization individuals and groups, and that includes systems, structures, routines and procedures (CROSSAN; LANE; WHITE, 1999).

Organizational learning allows development, acquisition, transformation, and exploration of new knowledge, enhancing organizational innovation. Upon learning through experiences, new knowledge is created in the organization, thus considering learning as a process of change that generates knowledge and, as a consequence influences new learning processes (ANGELONI; STEIL, 2011; ARGOTE; MIRON-SPEKTOR, 2011).

3. Intranet as a support tool for organizational learning

Information technology is competitiveness and strategic survival factor to favor organizations to perform the function of wealth creators. It is an "important instrument of support to knowledge incorporation as the main value aggregator to products, processes, and services delivered by organizations to their clients" (ROSSETTI; MORALES, 2007, p. 125).

Rossetti and Morales (2007) highlight that there is a constant search for technology as capture instrument of knowledge from an individual or group of people for incorporation of that knowledge both in culture and in organizational management processes – or yet, as a way of knowledge management. Within information technologies capable of contributing to organizational learning, intranet stands out.

B. Téc. Senac, Rio de Janeiro, v. 44, n. 1, p. 85-100, jan./abr. 2018.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

Its definition can be as a private internet-based network (BENNET, 1997), commonly used for spreading internal organization information, segmented by sectors, being a conduit of information between company and employees (CORRÊA, 2014).

An intranet is composed of services similar to what is available on the internet; only it has restricted access to organization members. It has information as primary input. Although its peculiarities distinguish it from other technologies, for it eases organization, transmission, and access to information, which is available quickly to organization members. The use of hyperlinks simplifies organization and access by making it viable the creation of links between different information fragments scattered through the organization; from the fact that reach restricts to the organization, it eases free flow of information since there is no security worries related to external agents. Those characteristics indicate the existence of common ground between intranet and organizational learning since it contributes to creation, integration, and management of organizational knowledge (RODRIGUES; MARQUES, 2007).

Companies have been using quite often intranet for its capability of instantly reaching a large number of people and getting, in real time, relevant information that allows them to react more rapidly to market circumstantial changes. It comes at a low set-up cost, with administration by a single employee and does not demand constant software upgrades to work on different company workstations. Featuring a universal interface, it makes training costs for tool using very low (DRUCKER, 1998).

Intranet offers better practices in regards to operational efficiency. Employees have faster access to more precise information. With better knowledge, collaborators will have grounds to create better relations with clients, vendors, and partners, resulting in higher organizational efficiency (LAUDON; LAUDON, 2007).

Carvalho (2012) argues that intranet has stood out from technology and computer advances, along with processes digitalization and new administration techniques that modified the enterprise scenario and allowed that communication within organizations took new and more dynamic information flows, bringing ease of use, quality, and swiftness on obtaining strategic data for decision taking in any sector or division.

The use of corporative networks has been the reason of numerous studies in organizations, which every day adds to the intranet due to its strategic importance for disseminating information along with internal public (SOUZA; LOPES, 2006). Stenmark (2003) adds that intranets allow access to documents and reports generated by geographically disperse units, allowing that people who rarely or never meet in person to share information, thoughts, and ideas in virtual encounters.

4. Methodological procedures

This qualitative and exploratory research has brought the investigation development of questions related to the intranet phenomenon and its relations to organizational learning. The study object was Senac. The choice for this institution came from the

B. Téc. Senac, Rio de Janeiro, v. 44, n. 1, p. 85-100, jan./abr. 2018.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

fact that it is the leading agent in professional education aimed at commerce, services and tourism sectors in the country for the past 70 years.

The unit of analysis was the technical team under the commercial sector of a Senac campus in the state of Paraná. The option for the commercial sector as an empirical field of research is justified for it being a sector responsible for executing technical-administrative tasks related to contact, promotion and commercialization of the institution's products and services, on top of being responsible for events promotion.

The research subjects were two Market Relation Technicians ("TRM"). The used data collection method was a semi-structured interview, containing questions related to organizational learning and intranet. Interviews with the research subjects were performed individually on December 16, 2016, with average duration of 23 (twenty-three) minutes. Upon starting the interviews, first, there was the presentation of the subjects to the information related to the research objectives, the interview outlines, and the Free Informed Participation Consent Form for signature.

The analysis of data had the light of presented theoretical framework, having as its basis the content analysis proposal from Bardin (2009). The objective sought to identify the explained categories of organizational learning and its relation to the intranet. Beyond that point, the interviewees are TRM 1 and TRM 2 due to non-disclosure, confidentiality and identity preservation.

5. Presentation and results discussion

This item presents research results obtained through the interviews performed with the unit of analysis a technical team under the commercial sector of a Senac campus in the state of Paraná and splits into three sections. The first section exhibits result relative to the understanding of the interviewees about organizational learning; the second section reports how knowledge sharing occurs in the organization, and the third section makes it evident the contribution of intranet for organizational learning.

5.1. Organizational learning

Organizational learning seeks to explain the resulting learning of interaction between individuals in organizations (ANTONELLO, 2005). In that sense, about an understanding of organizational learning, the interviewees affirmed it occurs when the organization can share knowledge together with its staff. It is about making people comprehend the institutional thought, as put out by TRM 1:

> I learn from you now in our talk, I learn with a colleague calling me and asking how I got a specific system activity done, we learn through updated operating manuals, through information sharing via email, phone, weekly meetings. I believe those are other ways of sharing knowledge.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

TRM 2 points out that "it is everything that you can learn in the organization, it is everything the company wants to let you know about work performance, it is everything I learn".

Given that, it is worthy of note that both participants affirmed that organizational learning occurs in the organization in all levels, thus relating to what studies indicate about organizational learning from Crossan, Lane, and White (1999). They sustain organizational learning as being part of a process that involves assimilation of new concepts and using already learned contents, occurring at individual, group and organizational levels.

As for the process of organizational learning in the institution, participants observed that it occurs in diverse forms. It can happen, for example, through means of web conferencing through which it is possible to notice the involvement of all levels, be it strategical, managerial or tactical. Interviewees have also commented that all employees from different categories use documents made available on the intranet. Therefore, those who participate realize learning in the context of the organization. They also have considered that this process may occur through means of formal and informal meetings, through information exchange with colleagues on coffee breaks and email exchanges.

Collaborative relationships build organizational learning with the intention to align knowledge diversity

To Iagarashi (2009), collaborative relationships build organizational learning with the intention to align knowledge diversity, experiences, capabilities, and means of doing things that people and communities have and use, being necessary to transform individual capabilities in organizational capabilities. Thus, organizational learning develops the capability of learning and sharing knowledge in different forms. It is, as discussed by Nonaka and Takeuchi (1995), a process through which the organization increases knowledge created by individuals in an organized form and transforms such knowledge in part of the knowledge systems in the organization.

Organizational learning may refer both to the endless process of cognitive modifications and to the results of this process. In other words, the verb "to learn" can be a result or a process verb (NICOLINI; MEZNAR, 1995).

5.2. Knowledge sharing

Knowledge sharing in the institution is key to organizational learning (SOUZA; TREZ, 2006). In that regard, related to how this sharing occurs, TRM 1 has stated, "[sharing] forms are not too orthodox for knowledge, I notice that we are exchanging knowledge all the time". Interviewees have reported that they learn through means of informal conversations, phone calls, and email exchange, weekly meetings, in dynamic and interactive forms with their work colleagues.

Individual knowledge sharing, as mentioned by participants, is initially through email exchange between peers or their work teams and, when they realize how relevant the

B. Téc. Senac, Rio de Janeiro, v. 44, n. 1, p. 85-100, jan./abr. 2018.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

discussion is, they schedule a meeting for better comprehending the subject. It can also happen in informal ways, such as during a coffee break, on interaction moments about the need of sharing understandings of discussed matters. The participants have also mentioned other sharing resources, among them the use of instant messaging apps like WhatsApp, which has been favoring the process of institutional knowledge.

In regards to interviewees' comprehension related to the way the team shares knowledge, both of them realize the institution as a favorable and dynamic environment for this process, both at the individual and collective level. They highlight the use of corporative emails, informal meetings, coffee breaks, formal alignment meetings and collective comprehension of institutional matters.

In that regard, as stated by Nonaka and Takeuchi (1997), organizational knowledge can only be created if there are involvement and activity of actions that use intention, autonomy, fluctuation and creative chaos, redundancy, and variety of information.

5.3. Intranet

In regards to the intranet contribution for institutional learning, the interviewees affirmed it is possible to learn. They say "the intranet is the first level to use, it has become a staple of what to do in daily work" (TRM 1); "it is rich in information through manuals, procedures, service orders, ordinances, documents, human resources that aid us on a daily basis" (TRM 2). They have also reported that they use the intranet daily as a tool for their activities, although complaining that there is a need for documents to be better organized.

Those reports come to the positioning of several authors saying that the intranet is an organizational learning tool within the institution. Laudon and Laudon (2007) consider that the intranet offers better practices in regards to operational efficiency. Employees have faster access to more precise information. With better knowledge, collaborators have grounds to create better relations with clients, vendors, and partners, resulting in higher organizational efficiency.

On top of that, the participants have declared that the internet allows other forms of knowledge sharing, such as "an intranet chat for information exchange between units" (TRM 1). In their current model, "the intranet would be even more beneficial if better organized because there is much relevant information, only badly sorted" (TRM 2). Through those reposts, it is possible to observe the need to group documents, sectors, and information so to favor even better the knowledge sharing and organizational learning.

In regards to intranet resources that the interviewees use most often and how frequent, TRMs make use of distinct resources for their commercial activity tasks. They reported using the tool daily for executing their tasks since all necessary procedures for their functions could be found there, be it in the retail or corporative segment.

B. Téc. Senac, Rio de Janeiro, v. 44, n. 1, p. 85-100, jan./abr. 2018.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

As affirmed by Rodrigues and Marques (2007), the intranet has information as primary input. It eases organization, broadcast, and access to information, which is made available quickly to all organization members; it makes it viable the creation of links between several information fragments scattered throughout the organization; it has restricted reach to the organization, and it eases the free flow of information. In the same manner, Stenmark (2003) considers that the intranet allows access to documents and reports generated by geographically dispersed units, allowing that people who never meet in person to share information, thoughts, and ideas in virtual encounters.

As far as making available the processes in the intranet to achieve commercial goals, the interviewees realize the tool as a follow-up and management support facilitator, and crucial to goal achievements at individual and organizational levels, because it aids the performance of their functions. In regards to available documents on the intranet being enough for their commercial activities performance, the interviewees reported that available documents are enough, especially as for manuals and directions. However, they mention the need to organize better and make them available. According to their reports: "there should be an option to 'search document' through keywords or word fragments, so you can search in the intranet for an associated organization of activities" (TRM 1) and "document locations are separated in very different places, which makes it hard to find them" (TRM 2).

In that sense, one can observe the need for organizing the documents to favor even more organizational learning, as employees, for many times, are not aware of those documents since they cannot identify the location where they are made available in the intranet.

Participants have also reported that they use other information sources for commercial activity, such as a search database for *Cadastro Nacional de Pessoa Jurídica (CNPJ)*, so they can have a quick look on all activities already taken with the client, negotiation status, possible other projects developed with the client, among others. Currently, consulting coworkers through phone calls or email make this.

Besides using that more categorized information, they reported the use of a database external to the intranet, the Enterprise Orientation System (SOE), a software last updated on 2014 and therefore does not bring updated information about CNPJs and contributors to the Fecomércio/Senac system.

About this issue, according to Rodrigues and Marques (2007)), organizations have acted in the sense of enhancing their intranet due to strategic importance for dissemination information to their internal public. The most significant impact of this tool comes from its capability to contribute to creation, integration, and management of organizational knowledge (SCOTT, 1998), which indicates the existence of a link between intranet and organizational learning.

As for additional comments about the interview, participants stated once more the submitted information. TRM 1 has also highlighted that "intranet was born as a place

B. Téc. Senac, Rio de Janeiro, v. 44, n. 1, p. 85-100, jan./abr. 2018.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

to query for instructions. It has suffered some modifications some time ago and now adds much more value to the company". TRM 2 has emphasized the importance of intranet in the organization's daily routine, making it possible to promote their Unit and follow up with the remaining, making it evident that the intranet is "important because it is a way of sharing knowledge and information". The interview ended showing and once more reinforcing the need to organize and better find documents made available on the intranet.

6. Final considerations

The literature describes organizational learning as a process constituted of steps or components of acquisition and broadcast of information and shared interpretation that promotes behavioral changes or response action to learning and has a direct impact on organizational results.

It occurs in diverse forms, as using informal talk, email exchange, formal meetings, and intranet use.

Organizational learning does not reflect only in positive performance results on the short term, but mainly in interpretation and profound understanding of action, reflection and dissemination processes. The swiftness in organizational learning is an essential competitive advantage in a dynamic and high competitiveness environment. Thus, eliminating barriers to learning is a key-factor to allow knowledge base enhancement in organizations.

In that context, the goal of this research was to analyze the possibilities of organizational learning originating from intranet use in the commercial sector in a unit of Senac Paraná. The proposed objective was achieved, considering its identification through interviewee's reports. Therefore, confirm the intranet favors organizational learning of the institution at the pace the company members acquire new knowledge and realize their use in the company as the potential for development. In its sense, knowledge sharing consolidates when different sources of information shared, generating new knowledge.

Beyond that, intranet in the institution aids daily routine work of the technical commercial sector team in the study-object unit, thus being an essential tool for learning and one that aids the reach of individual and organizational milestones. However, this system needs view adjustments to ease search and update of documents by their workers.

Since it is a pilot-project performed in a Senac unit in the state of Paraná, the suggestion for future reports is applying this research along with remaining technical teams in this and other Senac units with the intention of going further deep in understanding how the intranet can contribute to the institution's organizational learning.

Within the theory field, few studies relate organizational learning themes and intranet, which reinforces the need for further researches in this segment.

B. Téc. Senac, Rio de Janeiro, v. 44, n. 1, p. 85-100, jan./abr. 2018.

Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

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Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

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Valéria Letícia Alves, Rejane Sartori and Regiane Macuch

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Valéria Letícia Alves, Rejane Sartori and Regiane Macuch