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### ABSTRACT

Organizational Learning (OL) and leadership development (DL) are topics related to behavior change in organizations. We did not find studies that show the relationship between OL based on the 4Is Framework processes and DL. The objective of

the article is to identify evidence of the psychological and social processes of OL found in the reports of results obtained in DL actions promoted within organizations. A narrative literature review, with a structured search and application of inclusion and exclusion criteria and thematic analysis were used. Initial evidence that associates OL with DL and characteristics found for each of the 4Is processes are presented. The findings suggest as evidence cognitive and behavioral changes caused by DL actions, which in turn, generated changes in organizational culture, such as the adoption of new practices and routines.

**Keywords:** Leader development, 4I framework, psychological processes, social processes.

## 1 INTRODUCTION

Organizational learning has been proposed as a strategic process and the only sustainable competitive advantage in the future (Vera & Crossan, 2004). Seen as a process of changing thinking and behavior (Crossan *et al.*, 1999), organizational learning (OA) can contribute, generating the changes that organizations need to adapt to the demands that constantly arise. Leadership people are expected to be the first to drive culture change, make new collaborative networks, and promote improved organizational performance (McCray; Warwick; Palmer, 2018).

Day, Harrison and Halpin (2009) suggest that the development of the leader occurs at various levels, dynamically and continuously. At the external level, more visible, is the acquisition of skills through the development of specialized knowledge. In this case, it requires concentrated practices over a long period. At the deepest, or internal, level, the authors argue that leader development occurs in the broad domain of adult development. AO and leader development, therefore, are connected constructs, both are continuous processes that occur throughout the entire life, whether of the organization or the leader (Day & Thornton, 2017).

From the understanding of the connection of these concepts, a literature search was made of the use of the OA 4Is Framework proposed by Crossan *et al.* (1999) and leadership and leadership development actions within organizations. No empirical articles were found that addressed the two themes explicitly, which raised the following question: what are the indications of the four processes of OA, defined in the Framework of the 4Is (Crossan *et al.* 1999), which can be identified in empirical

studies on the results obtained after leadership and/or leader development actions? The objective of this article is to identify the evidence of the processes of intuition, interpretation, integration and institutionalization found in the reports of results found after leadership development actions and leaders promoted within the organizations.

## **2 THEORETICAL FOUNDATIONS**

### **2.1 ORGANIZATIONAL LEARNING**

Organizational learning is "a process, a social construction that transforms the knowledge created by the individual into institutionalized actions toward organizational goals" and considers learning a process of change in individual, group and organizational perspectives, in which the product of this process is organizational knowledge (Angeloni & Steil, 2011, pp. 121).

The level of individual analysis refers to the individual as an agent with a specific focus on learning that takes place in the organizational context. At the level of group analysis, the link between individual and organizational learning occurs, because it is through the groups that the sharing of learning and organizational behavior occurs. The organizational level is, in turn, the institutionalization of the learning that occurred at the previous levels (Angeloni & Steil, 2011). The changes once incorporated into the structures of the organization, represent learning in organizational breadth (Silva; Steil; Selig, 2013).

Intuition is the first process and therefore the beginning of learning, it is subconscious and occurs at the level of the individual, it is his experiences and can be expressed through metaphors. Interpretation, the second process, takes the conscious elements of this individual learning and shares it at the group level through language and actions. Mind maps are also constructions of the process of interpretation. Integration follows to change the collective understanding at the group level, it is the bridge to the organizational level. In this process occurs the development of shared understanding among group members to act in coordination through mutual adjustments, resulting in interactive systems, enabling the integration of people and groups, integrating ideas and actions. Finally, the process of institutionalization incorporates this learning throughout the organization, or in the groups in which the learned behavior is necessary, inserting it into their systems, structures, routines and practices, defining new rules and procedures (Crossan *et al.*, 1999).

The different psychological and social processes characteristic of each of the three levels of analysis can also be classified into behaviors resulting from each stage of OA according to Crossan *et al.* (1999) (Table 01). The processes and their distribution in the levels are not rigid and occur fluidly and cyclically, feeding back.

Table 01: psychological and social processes of organizational learning at the levels of analysis.

Level	Process	Inputs	Results
Individual	<i>Intuition</i>	experiences, images, visions, new possibilities	expressed through metaphors
Group	<i>Interpretation</i>	Language, cognitive maps	conversations and dialogues
	<i>Integration</i>	shared understandings, mutual adjustment	interactive systems
Organization	<i>Institutionalization</i>	routines, diagnostic systems	rules and procedures

Source: adapted from Crossan *et al.*, 1999.

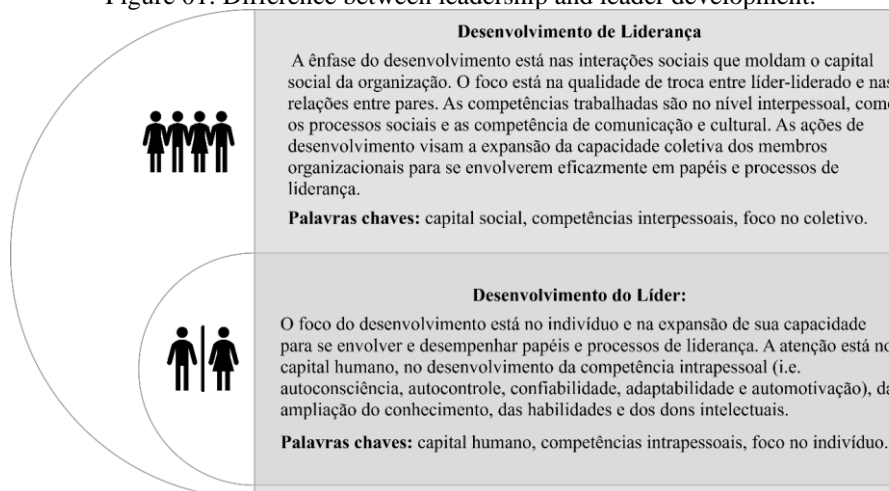
Leadership is considered one of the organizational roles that influence the conditions for collective learning (Vera & Crossan, 2004; Cummings *et al.*, 2013, Henna Hasson *et al.*, 2016), since it has among its attributions to facilitate individual and collective efforts to learn and achieve the shared goals in the organization.

## 2.2 LEADERSHIP AND LEADER DEVELOPMENT

Leadership has traditionally been conceptualized as an individual-level skill (Day, 2000), however, to encompass the phenomenon of development one conceptually distinguishes leadership development and leader development.

Leader development is understood as the expansion of a person's ability to be effective in leadership roles and processes. In turn, leadership development is defined as a process of expanding the collective capacity of organizational members to engage effectively in leadership roles and processes. (McCauley, Moxley, Van Velsor, 1998). Figure 01 summarizes the differences in leadership development and leaders according to the literature.

Figure 01: Difference between leadership and leader development.



Source: Authors.

Caption:

Leadership Development: The development emphasis is on the social interactions that shape the organization's social capital. The focus is on the quality of exchange between leader-led and relationships between peers. The skills worked on are at the interpersonal level, such as social processes and communication and cultural skills. Development actions are

aimed at expanding the collective capacity of organizational members to engage effectively in leadership roles and processes.

Keywords: social capital, interpersonal skills, focus on the collective.

Leader Development:

The focus of development is on the individual and expanding his capacity to engage and carry out leadership roles and processes. The attention is on human capital, on developing intrapersonal competence (i.e. self-awareness, self-control, reliability, adaptability and self-motivation), expanding knowledge, skills and intellectual gifts.

Keywords: human capital, intrapersonal skills, focus on the individual.

The conceptual clarifications reinforce the importance of the development of intrapersonal and interpersonal competencies, in addition to the need to link the development of the leader with the development of leadership (DAY, 2000) and therefore, the searches for this research considered the two terms, leader and leadership.

### 3 METHODOLOGICAL PROCEDURES

We used the narrative literature review (Ferrari, 2015) performed through a structured search with the application of inclusion and exclusion criteria. The literature review followed a structure that combined a variety of sources and applied scientific strategies to limit the bias of article selection and evaluate them with a critical spirit (Botelho, Cunha, Macedo, 2011).

To achieve the proposed objective, a structured search was performed using four electronic databases: *SCOPUS*, *Web of Science*, *PsycInfo* and *SCIELO*. The inclusion criteria of the articles were the descriptors “*Leader\* development*” (thus including the words leader and leadership) and “*Organizational learning*” present in the title, abstract or keywords. The inclusion of the expression “4I” did not generate results. A total of 84 publications were found as of December 2020. In the second stage of selection, the abstracts were read to confirm if the articles explained the results perceived from the LD actions and if they addressed the theme of OA. After removing the repeated ones, 12 empirical articles were selected and analyzed in full, with qualitative or quantitative results of the LD actions.

We excluded studies that did not describe as results perceived by the organization or by the participants, that the LD experience brought new ways of acting, thinking, doing the work, or obtaining different results in their daily lives or in the organizational routines, which indicated that OA had occurred.

Thematic analysis (Braun & Clarke, 2012) was used from the elaboration of a matrix composed of the four processes described by Crossan *et al.* (1999) to analyze the collected data. The inputs and outputs described in Chart 01 served as a reference to identify and classify the elements that characterized the presence of each “I” in the evidence cited by the articles. For example, if the results described in one study reported that after the action of LD its participants claimed to be thinking

differently, it was understood as evidence of the intuition process. This analysis was done with all articles, for all 4Is.

#### 4 FINDINGS

Of the 12 articles identified in the systematic search, six of them presented in their results data that indicated the occurrence of the four processes of the 4Is Framework: intuition, interpretation, integration and institutionalization. Of the studies, which presented less learning processes, there were two cases that had results for the processes of interpretation and integration, but did not present the other two processes. There was an article in which the results described only evidenced the process of institutionalization and in general there were explicit descriptions of situations and behaviors of the first three Is: intuition, interpretation and integration.

In five of the studies, no information was found that could be classified as the process of intuition. It is worth remembering that this is a psychological, individual process, and in the event that the study does not include data with the testimony or analysis of the individual level, this evidence cannot be verified.

Regarding the institutionalization process, the analysis carried out took into account the data that showed how much the leadership development program generated change in the operation, processes and organization more broadly, because this process is considered present when the organization, as an institution, is enjoying the new behaviors obtained and the behavior transformation is institutionalized, with new practices and routines (Angeloni & Steil, 2011). Ten of the studies showed evidence of implemented and institutionalized actions. Table 02 shows which of the processes were identified in each of the studies analyzed.

Table 2 – Identification of psychological and social processes in the studies analyzed.

Process	Intuition (psychological)	Interpretation (psychological and social)	Integration (psychological and social)	Institutionalization (social)
Schultz <i>et al.</i> , (2018)	x		x	x
Wang; Bloodworth, (2016)	x	x	x	x
Naicker; Mestry, (2016)	x	x	x	x
Henna Hansson <i>et al.</i> , (2016)	x	x	x	x
Goldman <i>et al.</i> , (2014)	x	x	x	x
Lee <i>et al.</i> , (2014)				x
Phillips; Byrne, (2013)		x	x	x
Cummings <i>et al.</i> , (2013)	x	x	x	x
Joo; Ready, (2012)		x	x	
Watkins; Lysøis; deMarras, (2011)	x	x	x	x
Roberts; Roper, (2011)		x	x	x
Stewart, <i>et al.</i> , (2011)		x	x	

Source: Authors.

The evidence for the 4Is is described below, described as results of DL actions.

#### 4.1 INTUITION

Some actions cited in studies on leadership development programs promoted the first phase of the learning process, intuition. Intuition is the result of individuals' personal experiences when they recognize differences in patterns or possibilities. It is a uniquely human attribute and focuses on the subconscious process of developing insights. It is considered the beginning of a new *learning*. Studies have shown evidence of learning, such as the individual's willingness to new experiences (Naicker & Mestry, 2016), new perspectives on experiences (Watkins; Lysøis; deMarrais, 2011), increased self-confidence (Schultz *et al.*, 2018), and new perceptions and ideas (Wang & Bloodworth, 2016).

#### 4.2 INTERPRETATION

The individual interprets the world through its context, so the richer his "vocabulary", linguistic or experience, the richer his cognitive maps will be, which serve as a basis for interpreting the situations experienced and then make the construction of new learning. The focus of interpretation is the change in the understanding and actions of the individual, it occurs when individuals and members of a group explain themselves through words and actions. (Crossan *et al.*, 1999).

The results classified as interpretation process were identified when there was a change in the dynamics and departmental processes. For example: Focus on team building; Collaborative problem solving (Goldman *et al.*, 2014; Watkins; Lysøis; deMarrais, 2011; Wang & Bloodworth, 2016); Modification of department layout and meetings (Roberts & Roper, 2011; Naicker & Mestry, 2016); Creation of relational space (Stewart *et al.*, 2011); Implementation of training process for new equipment (Roberts & Roper, 2011).

#### 4.3 INTEGRATION

The process of integration and occurs at the group level, in collective action through language and communication. For the coherence between actions to evolve, shared understanding is compulsory and allows the integration of ideas and actions, which occurs through continuous conversation and shared practices. This process seems to be benefited by the opportunity to work with themes and situations experienced in the daily life of each professional.

This made a difference in the perceived validity of the LD program, as it allowed participants to feel included and see the practical application (Wang & Bloodworth, 2016; Naicker & Mestry, 2016; Henna Hasson *et al.*, 2016; Roberts & Roper, 2011). This idea is reinforced in Cummings *et al.*, (2013), when they state that the discussion of philosophical themes, to the detriment of practical discussions

and solutions to management problems, can be considered a demotivating factor and generate doubts about the validity of the development program. Practice is the most efficient way to promote this level of learning, as it is essential for understanding work (Crossan, *et al.*, 1999).

Behaviors such as increased interaction with colleagues to solve problems, exercising a systemic view, cooperative actions and network building have been reported (Watkins; Lysøis; deMarrais, 2011; Wang & Bloodworth, 2016). Strengthening team cohesion and internal connection, enabling the building of integrated teams (Phillips & Byrne, 2013; Cummings *et al.* , 2013) and the encouragement of senior leadership generated motivation and a development of strategic vision (Roberts & Roper, 2011), seeking integrated solutions between the different units and stimulating self-investment of time and resources in training (Cummings *et al.* , 2013; Wang & Bloodworth, 2016; Stewart *et al.*, 2011) are some of the examples identified as evidence of the Integration process.

#### 4.4 INSTITUTIONALIZATION

At this stage, the learnings are incorporated into the organization's systems, structures, strategies, routines, prescriptions and practices, into formal plans and systems. When the results are positive the actions become routines. Change requires time to implement (Cummings *et al.*, 2013), the support of the organization and the encouragement of senior leadership is critical to the long-term engagement of other participants (Cummings *et al.*, 2013; Wang & Bloodworth, 2016), whether or not the program can influence changes at the organizational level (Schultz *et al.*, 2018; Naicker & Mestry, 2016; Cummings *et al.*, 2013; Lee *et al.*, 2014; Goldman *et al.*, 2014; Joo & Ready, 2012; Watkins *et al.*, 2011). Good relationships and support from supervisors (Joo & Ready, 2012) and colleagues is identified as a requirement for training transfer (Lee *et al.*, 2014; Goldman *et al.*, 2014; Henna Hasson *et al.*, 2016) and consequent stimulus for learning.

In some studies, the perception of learning experienced by the different hierarchical levels drew attention, because employees perceived changes in the functioning of the sectors and in management, but did not recognize their own behavioral changes. While the leaders, noticed the change in the behavior of their employees, without declaring in the survey the change in management processes and systems. As if they were not aware of the change itself and the changes brought about by it (Henna Hasson *et al.*, 2016; Naicker & Mestry, 2016).

Reports such as "group members continue to raise questions and reflect" and the organization's director saying how much 'the 5-step method of action', learned in leadership development, has allowed executives to accelerate the pace of business problem solving and significantly strengthen team cohesion and internal connection (Wang & Bloodworth, 2016, pp. 180). These are indicative that the leadership development program impacted the cognitive process, generating actions that impacted the

organization (Goldman *et al.*, 2014; Roberts & Roper, 2011; Phillips & Byrne, 2013), although it does not officially record that the process of institutionalization has been achieved.

#### 4.5 ORGANIZATIONAL LEARNING AND LEADERSHIP DEVELOPMENT IN PRACTICE

Studies were found that presented quantitative and qualitative data that show a connection between leadership development and organizational learning, but this evidence, because it is from case studies, cannot be generalized (SCHULTZ *et. al*, 2018; NAICKER; Mestry, 2016). The technique of learning by action, in which real problems are worked out and that enable both the support and the confrontation of colleagues (McCRAVY; WARWICK; PALMER, 2018) has been used in several studies as a development strategy (SCHULTZ *et. al*, 2018; WANG; Bloodworth, 2016; NAICKER; Mestry, 2016; PHILLIPS; BYRNE, 2013; ROBERTS; ROPER, 2013). Other strategies found were communities of practice (CUMMINGS *et al.*, 2013; PHILLIPS; BYRNE, 2013), and the encouragement and dedication of leadership to workplace training (HENNA HASSON, *et al.*, 2016; GOLDMAN, *et al.*, 2014).

The studies bring evidence that the development of leadership and the leader is a means for organizational learning to occur at the different levels: individual, group and organizational. Nonetheless, the data suggests that it takes time for new learnings to be incorporated and that the support and agreement of senior leadership within the organization makes a difference.

### 5 CONSIDERATIONS

This article aimed to identify initial indications of the psychological and social processes of organizational learning of the 4Is Framework: intuition, interpretation, interaction and institutionalization, as a result of leadership and leadership development actions promoted within organizations.

It was contacted that the studies bring evidence that leadership and leader development is a means for organizational learning to occur at different levels, however, it takes time for new learning to be incorporated. The analysis showed the importance of the support and agreement of the top management of the organization.

The studies presented quantitative and qualitative data that evidence the connection between leadership development and organizational learning, however, due to the nature of the studies, they cannot be generalized (Schultz *et al.*, 2018; Naicker & Mestry, 2016).

It was found that half of the articles indicated the occurrence of the processes: intuition, interpretation, integration and institutionalization. D and general form the authors made explicit and recognized as a result the first three *Is*: intuition, interpretation and integration. The process of



institutionalization is not always recognized by the authors. However, evidence was considered when the results described pointed to changes in organizational processes and routines, which occurred in ten of the 12 cases analyzed.

This article presents the examples described in the studies that are evidence of psychological and social processes, thus contributing to the definition of organizational learning indicators of leadership development programs.

The article focused on evidence of organizational learning derived from leadership development, future studies may deepen the proposal of indicators for leadership development programs. Another point that seems to deserve further investigation is the period necessary for learning to reach the level of institutionalization through leadership development. Check the minimum time for a development program to generate organizational learning, at the other hierarchical levels and, consequently, in the organization. Comparative research is suggested to verify distinctions in the process in different organizational segments.

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