



## Artículo

## A model of organizational learning in practice

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## ABSTRACT

The paper analyzes the organizational learning process experienced in the design of a new packing service for the pharmaceutical sector, using the 4I model designed by Crossan, Lane and White (1999) and its further developments. It was carried out an exploratory study using qualitative research methods. It was found evidence supporting the learning processes stated by the original model and its further developments. The interviews and focus group results suggested that organizational learning is not always a lineal process as stated by the model. Individual and group learning are parallel interacting and unfinished processes. This study contributed to adding empirical evidence to the 4I model of organizational learning and its further developments, in a manufacturing firm.

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## Un modelo de aprendizaje organizacional en la práctica

## RESUMEN

El artículo analiza el proceso de aprendizaje organizacional evidenciado en el diseño de un nuevo servicio de empaque para el sector farmacéutico, utilizando el modelo 4I de Crossan, Lane y White (1999), y sus desarrollos posteriores. Se realizó un estudio exploratorio, utilizando métodos de investigación cualitativa. Se encontró evidencia de los procesos de aprendizaje identificados en el modelo original y en sus desarrollos posteriores. Los resultados de las entrevistas y el *focus group* sugieren que el aprendizaje no es siempre un proceso lineal como está establecido en el modelo. El aprendizaje individual y grupal son procesos paralelos, interactuantes e inacabados. El estudio contribuye a adicionar evidencia empírica del modelo 4I de aprendizaje organizacional, y sus desarrollos posteriores, en una firma manufacturera.

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## Um modelo de aprendizagem organizativo na prática

## RESUMO

O artigo analisa o processo de aprendizagem organizativo que surgiu durante o planejamento de um novo serviço de embalagem para o sector farmacêutico, utilizando o modelo 4I de Crossan, Lane e White (1999) e os seus desenvolvimentos posteriores. Realizou-se um estudo exploratório utilizando métodos de investigação qualitativa. Foram encontradas evidências nos processos de aprendizagem identificados no modelo original e nos seus desenvolvimentos posteriores. Os resultados das entrevistas e dos *grupos de trabalho (focus group)* sugerem que a aprendizagem não é sempre um processo linear como modelo estável. A aprendizagem individual e em grupo são processos paralelos, interactuantes e inacabados. O estudo junta evidência empírica ao modelo 4I de aprendizagem organizativa e aos seus desenvolvimentos posteriores, numa empresa transformadora.

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## 1. Introduction

In the last two decades, the concept of organizational learning grew in academic publications as itself (Easterby-Smith and Lyles, 2003), and as a process of knowledge management (Briceño and Bernal, 2010; Dingsoyr, Bjornson and Shull, 2009). Since organizational learning is a multidisciplinary concept, there is not a unified definition for the term (Aramburu, 2000; Salk and Simonin, 2003). Organizational learning is understood as changes associated to environment adaptation (Cyert and March, 1963; Hedberg, 1981; Lloria, 2001), environment adaptation and transformation (Argyris and Schön, 1978; Argyris and Schön, 1996; Molina, 2000), knowledge acquisition (Huber, 1991), environment adaptation and knowledge acquisition (Garvin, 2000), environment adaptation or transformation and knowledge acquisition based in people, depending on the organizational grade of development (Castañeda and Pérez, 2005), the exploration and exploitation of learning (March, 1991), or the process of change in individual and shared thought and action, which is affected by and embedded in the institutions of the organization (Vera and Crossan, 2003). In this paper organizational learning is understood as a process that implies changes in cognition and behavior of individuals (Bandura, 2005; Castañeda and Fernández, 2007; Vera and Crossan, 2003) and also the institutionalization of knowledge (Crossan, Lane and White, 1999).

The organizational learning process involves a tension between assimilating new learning, frequently called exploration, and using what has been learned, this is exploitation (March, 1991). In words of Vermeulen and Barkema (2001), exploration is the search for new knowledge and exploitation is the ongoing use of a firm's knowledge base. Exploitation is based on local search, experiential refinement and selection and reuse of existing routines (Baum, Li and Usher, 2000).

Organizational learning is a process involved in the creation of a new service (Pohlmann, Gebhardt and Etzkowitz, 2005); however there is little empirical evidence on how it occurs. A well-known model of organizational learning in academic contexts, which integrates levels of learning as well as cognitive and behavioral changes as parts of the learning process, is the 4I Model of Crossan et al. (1999). This model has been enriched with some contributions (Zietsma, Winn, Branzei and Vertinsky, 2002; Castañeda and Pérez, 2005; Castañeda and Fernández, 2007).

The purpose of this paper is to provide some empirical data on the organizational learning processes involved in the design of a new service, using the 4I model of organizational learning, and further improvements of the models, in particular the one stated by Castañeda and Perez (2005), where a more complete explanation of individual learning is suggested based on the social cognitive theory of Bandura (1986).

The 4I organizational learning model states some premises: organizational learning is multilevel (individual, group and organizational), the three levels of organizational learning are linked by social and psychological processes, and cognition affects action and vice versa; however, there is little empirical research that offers support to those premises (Crossan, Maurer and White, 2011). The paper contributes to fill this gap, providing empirical support on the way learning processes take place in the design of a new service.

Next, a description of the 4I Model of organizational learning will be presented, and further improvements developed by Zietsma, et al. (2002), Castañeda and Pérez (2005), and Castañeda and Fernández (2007).

## 2. The 4I model of organizational learning and its further developments

The 4I model of Crossan et al. (1999) identifies four processes of learning: intuiting, interpreting, integrating and institutionalizing

(fig. 1). The first process, intuiting, takes place at the individual level and it is defined as "the preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience" (Crossan et al., 1999, p. 525). Even though, some human learning is preconscious, most of learning is conscious (Bandura, 1986). Subsequent improvements of the 4I model take into consideration this point. The second process, interpreting, occurs at the individual and group levels. It is defined by Crossan et al. (1999) as "the explaining through words and/or actions, of an insight or idea to one's self and to others" (p. 525). Although some conversations in groups are about intuitions, most conversations are based on current situations, ideas, beliefs and other complex cognitive processes associated to human capacities (Bandura, 2006). According to Crossan et al. (1999) the third concept of the model is integrating, defined as "the process of developing shared understanding among individuals and of taking coordinated action through mutual adjustment" (p. 525). The fourth concept, institutionalizing, "is the process of ensuring that routinized actions occur. This is the process of embedding learning that has occurred by individuals and groups into the organization and it includes systems, structures, procedures and strategy" (Crossan et al., 1999, p. 525). Knowledge institutionalization contributes to build competitive advantage by converting learning into practice (Flores, Zheng, Rau and Thomas, 2012).

Zietsma, et al. (2002) presented an improvement proposal of the 4I model of Crossan et al. (1999) adding two processes: attending and experimenting. Attending is an active process at the individual level of seeking information from the environment. In relation to experimenting, Zietsma et al. (2002) stated that "individuals and the groups experiment and the result of their actions add substance to their cognitive interpretations" (p. 63). The main contribution of the work of Zietsma et al. (2002) consisted of emphasizing the importance of active learning.

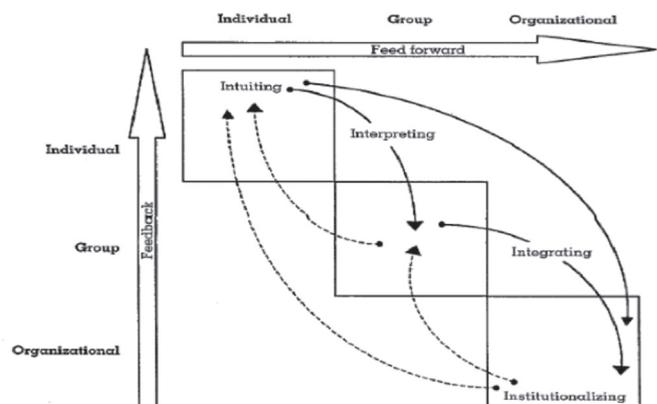


Figure 1. 4I Model of Organizational Learning.  
Source: Crossan, Lane and White (1999, p. 532).

Castañeda and Pérez (2005) based on the social cognitive theory of Bandura (1986, 2005) stated that human learning is a complex process that may not be explained only based on intuitions and attention. Intuition is characterized by a lack of awareness about how judgements and results are acquired (Hogarth, 2001). In this sense, intuition only explains a kind of learning where attention is not required; most learning in the context of organizations, however, is based on direct experience and conscious observation. Organizations are changed by people's behaviour (Bandura, 1988; Bandura, 1997). Organizational learning is a collaborative effort where individuals create new ideas by sharing their knowledge through interaction with others. In this context, Castañeda and Pérez (2005) added to the individual level of the 4I model of Crossan et al.

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