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Workplace Learning Strategies and Professional Competencies in Innovation Contexts in Brazilian Hospitals

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Abstract

Competencies mobilized by service providers form an element of hospital services insofar as scientific and technological procedures that are part of the service become tangible. In view of the fact that hospitals have adopted Information and Communication Technologies (ICT), it would be logical to assume that learning contributes towards acquiring competencies related to changes in hospitals resulting from the adoption of new technologies. This paper aims to analyze relationships between workplace learning strategies and professional competencies after the adoption of innovations supported ICT in hospitals. Eleven interviews were carried out with professionals from three different hospitals and identifying the professional competencies resulting from innovations supported by ICT. This was followed by a cross-sectional survey involving 425 employees at the hospitals surveyed. The data analysis was undertaken by means of structural equation modeling (SEM). The results confirm the hypothesis and indicate that the performance of professional competences based on new ICT is determined by the way the respondents think, change and apply their knowledge, skills and attitudes in the workplace by use of new information and communication technologies.

Key words: learning strategies; professional competencies; innovation in services; hospitals; Brazil.

Introduction

While research on innovations in hospitals has increased in recent years, many studies focused on macro-level variables such as organizational structures as innovation requirements (Länsisalmi, Kivimäki, Aalto, & Rouranen, 2006). Yet, innovation in health services is complex and dynamic in nature (Burke & Menachemi, 2004). Micro-level factors - such as employees' learning strategies and competencies - significantly affect innovation and change processes in hospitals (Jaana, Ward, Paré, & Sicotte, 2006). It is thus very useful to design systematic studies to examine micro-level factors in innovation processes in hospitals.

Innovations have been common in health services. Information and Communications Technologies (ICT), in particular, have been introduced to both diagnose and treat illnesses and improve the quality of healthcare and professional training in many hospitals around the world (Ford, Menachemi, Huerta, & Yu, 2010). In innovation literature, researchers have examined the impact of different variables (internal and external) on the generation, adoption and dissemination of ICT in hospitals (Wurster, Lichtenstein, & Hogeboom, 2009). A useful approach that has received increasing attention is concerned with the competencies of hospital employees who deal directly or indirectly with patient care. For example, ICT enables access to a complete blood count or a brain map via the Internet. But it also implies a **situation change** between service providers and patients, since both groups have to adapt to new ICT technical requirements and communication styles (Zarifian, 2001). As hospitals face changes associated with ICT adoption, what professional competencies are important for employees to develop to facilitate the innovation process?

Zietsma, Winn, Branzei, and Vertinsky (2002) emphasize that organizational changes are the combined result of new behavioral patterns, attitudes, values, skills and knowledge. Thus, when adopting ICT, hospitals need to adapt themselves to new information paradigms, with new management components and possibly new hospital product(s) (Burke & Menachemi, 2004; Djellal & Gallouj, 2007a). At the same time, this adaptation involves learning by the hospital staff to acquire new professional competencies in terms of health security, patient comfort, and perception (Gallouj, 2002; Gallouj & Weinstein, 1997). As of now, the precise relationship between learning and professional competencies has remained unclear in the literature. What professional competencies can be improved by employees learning ICT, and how?

According to Zarifian (2001), service production logic requires professionals with broad training and qualifications, rather than training that is restricted to a specific job with standardized tasks. This is likely the case for health services because competencies are present in different aspects of this profession, such as appropriate behaviors and technological competencies (Gallouj, 2002). However, according to Djellal and Gallouj (2007a), few studies have been undertaken to understand the effects that innovation has on employee competencies in the service industry. As a result, there is a lack of knowledge about the learning conditions needed to generate competencies to support the innovation process in hospital environments, particularly with respect to ICT-related processes.

This article aims to explain the relationships that exist between learning strategies in the workplace and professional competencies associated with ICT adoption in the context of Brazilian hospitals. This context offers excellent research opportunities. On the one hand, ICT is often used by hospital administrators primarily for the purpose of benchmarking. There is a practical need to better understand how ICT can actually enhance productivity in Brazilian hospitals. On the other hand, researchers have already obtained some useful findings about learning and professional competencies in Brazil (Brandão, 2009; Moraes, 2010; Pantoja & Borges-Andrade, 2009). In fact, some of these findings have become motivations for the present study.

In the following section, we will present the conceptual framework that guides this research. Subsequently, we will describe the methodology and report the findings of our interviews and surveys. We will then discuss the implications of the study and suggest directions for further studies.

Conceptual Framework

The introduction of ICT is believed to generate positive impacts on organizational performance. This relationship depends on the use of appropriate learning strategies to produce different forms of professional competencies. In this article, we focus on learning strategies and professional competencies.

In order to characterize the impact on ICTs, Djellal and Gallouj (2007b) propose an analysis considering the locus of innovation. Simply put, ICT adoption has positive outcomes only in certain work processes. In back office processes, ICT may decrease competencies, since work procedures are standardized and fewer employees are needed. On the other hand, in front office processes ICT positively impacts service productivity, competencies and job openings, since ICT adds value to production and service delivery.

Because ICT can affect organizational processes in different ways, it is important to distinguish specific forms of professional competencies. Zarifian (2001) highlights the fact that adopting ICT redefines occupations and, consequently, work processes within organizations. According to this author, two types of competencies emerge when new technologies are adopted. The first type of competency is transversal to different sectors of an organization and mastering these technologies becomes the decisive element in employability. The second encompasses the specific processes of a sector or a department. This second competency includes the use of new technologies, which can increase professionals' participation and responsibility in processes that become increasingly broader and more integrated, especially for service delivery.

Zarifian (2003) defines competency as an individual taking initiative and responsibility in professional situations. Transversal competencies emerge as competencies about organization, processes, and unpredicted situations - these are **service-oriented competencies**. Competencies with respect to specific sector or department involve the adoption of proper behavior and technology. They are **work-oriented** and **technology-oriented** competencies.

According to Djellal and Gallouj (2005), providing hospital services involves a whole series of interdependent activities. Competencies mobilized by service providers, based on the use of different types of support, form an element of hospital services insofar as scientific and technological procedures that are part of the service become tangible. These competencies represent the mobilization of learning experiences and skills that can result in changes or improvements in any of the elements of which a service consists, whether peripheral or essential.

In view of the fact that competency represents an important source of service delivery and that hospitals have adopted ICT on a large scale, it would be logical to assume that learning contributes towards acquiring competencies related to changes in hospitals resulting from the adoption of new technologies (Jaana *et al.*, 2006).

Bearing in mind that hospital service is complex and dynamic, learning new competencies is critical for service delivery in hospitals, requiring planning and investment. However, evidence suggests that formal training and development activities can respond more slowly to emergency demands of developing new competencies essential for effective work performance (Coelho & Borges-Andrade, 2008). In this context, the importance of often informal individual learning strategies to complement formal training and development processes becomes more apparent. Informal learning is seen as a real alternative that individuals adopt so as to meet the needs of emergency competencies produced by organizational environments where there is constant change, as is the case, for example, in hospitals (Spouse, 2001).

Learning strategies specifically refer to **how** individuals select, acquire, change, manage and apply information related to task performance (Dansereau, Actkinson, Long, & McDonald, 1974). Learning in the workplace, in turn, is conceived as an inherent human attribute, which is learned inside

and outside the organization and adapts itself to the most diverse contexts. Thus, learning is defined as a behavioral change process based on an individual's interaction with the environment (Abbad & Borges-Andrade, 2004).

Dansereau, Acktinson, Long and McDonald (1974) define learning strategies as a way to select, store, manipulate, manage and apply information that occurs at any level of human behavior. This definition has supported researches in the area and was one of the reasons why Warr and Allan (1998) suggested taxonomy of these strategies in organizational contexts: cognitive, behavioral, and self-regulated learning strategies. In this study our focus is on the cognitive and behavioral learning strategies.

Cognitive strategies are: reproduction, organization and elaboration. The reproduction strategy consists of repeating to oneself the behavior procedures to be learned. The organization strategy includes procedures for identification and creation of a mental frame consisting of matters to be learned. The elaboration strategy describes evaluation of the implications and mental connections between the content to be learned and the knowledge that exists within the environment (Warr & Allan, 1998).

Behavioral strategies are: seeking help through interpersonal relationships, seeking help from written material, and practical application. The first strategy refers to behavioral procedures for obtaining assistance from other people. The second represents the search for help in documents, manuals, computer programs and in other non-social sources. Practical application describes how an individual increases their own knowledge based on attempts to do something practical (Warr & Allan, 1998).

In hospitals, learning is influenced by the dynamic and complex character of interaction between service providers and users. Hunter, Spence, McKenna, and Iedema (2008), state that hospital professionals, particularly front office personnel, learn by adopting behavior directed towards interaction with other professionals, so as to facilitate the transfer of knowledge relevant to daily practices. Individual learning in hospitals is also marked by a reflection about the subjects learned in terms of applicability and congruence with work challenges (Fraser, 2006).

On the other hand, the simple repetition of assistance protocols is also an alternative to learning in hospitals, as well as the intensive interaction that exists between professionals; since, in complex, unstable environments with varied demands as in hospitals, learning occurs in a short period of time and depends mostly on the motivation and capacity for self-regulation that individuals have to learn (Goldman, Plack, Roche, Smith, & Turley 2009). According to Menachemi *et al.* (2007), Boaden and Joyce (2006), and Tomasi, Facchini and Maia (2004), innovation in hospitals generates opportunities for exchange and creation of knowledge and experiences between doctors and other health professionals, in addition to allowing greater security for retrieval, protection and control of patient information and health assistance procedures.

Individual learning in hospitals also involves different behavior directed towards the acquisition of competencies relevant to work performance. This fact refers to the term **learning strategies in the workplace** Warr and Downing (2000) showed that adult learning is more often found in non-academic contexts, since professional fulfillment is directly linked to the daily exercise of activities and social interaction in the work environment.

In Brazil, studies about the relationship between learning strategies and professional competencies have shown that practical application strategies and the search for interpersonal assistance play a central role in the processes to acquire, retain and transfer new competencies in the workplace (Pantoja & Borges-Andrade, 2009). Extrinsic and intrinsic reflection strategies are even stronger predictors for the expression of management competencies at the workplace (Brandão, 2009) and favor continuous learning at work (Moraes, 2010). Although no studies exist in Brazilian literature about the previously described relationships, based on the aforementioned theoretical frame of reference, the following research hypothesis was formulated:

H_1: the use of workplace learning strategies positively impacts professional competences.

Method

This study applied two research stages – qualitative and quantitative. The qualitative stage sought to identify professional competencies in Brazilian hospitals via individual interviews. The hospitals involved in the study, from Brazil's Capital (Brasília), have adopted ICT supported innovations. The gathering of data during this stage occurred between September and November 2009. Two criteria were established to select the hospitals for the study: (a) the hospital had to provide at least three hospital services; and (b) the hospital had to have adopted or developed some form of applied ICT to a hospital service that had been implemented for at least one year. Give these criteria, six hospitals were invited to participate in the research and three confirmed acceptance. Their participation forms the basis of this study.

The following three innovations were identified in these hospitals: Intensive Care Unit Management System (ICUMS) in hospital A; Electronic Patient Record (EPR) system in hospital B; and Intelligent Operating Room (IOR) in hospital C. In hospital A, the ICUMS was installed in 2003. It was embraced by an internal hospital team composed of two nursing management staff, a computer technology expert and a doctor. In hospital B, the EPR was implanted in 2007. Its implementation was conducted by a team composed of one strategic level manager, two nursing staff and one outside consultant. Hospital C acquired its IOR in 2008 from a North American supplier. The supplier participated in the equipment installation and provided training to the staff responsible for its implantation. It has also offered technical support since then. The team responsible for IOR installation was composed of two surgical center nursing supervisors, the surgical center's chief medical officer and the hospital's IT manager. Interviews were undertaken with eleven professionals (including members of the teams responsible for implementing these innovations) and then analyzed using content analysis. Twenty different professional competencies were identified during the analysis.

The second phase was a **cross-sectional survey**. The considered population was composed of 3,100 employees at the three selected hospitals. It was divided as follows: 1,500 in hospital A, 300 in hospital B, and 1,300 in hospital C. The data was gathered between February and June 2010. We applied a census and research questionnaires were distributed to the whole population by human resource representatives at each hospital. A total of 456 questionnaires were returned (return rate about 15.2%), 425 of which were considered valid.

A structural equation model technique was used to evaluate the proposed model (Figure 1) (Hair, Black, Babin, Anderson, & Tatham, 2009). Multiple regression analyses were also undertaken to identify the impact of learning strategies on each professional competency identified in the qualitative phase.

Workplace learning strategies considered the practices used by employees to acquire and develop competencies at work. The applied scale to measure this variable was developed by Pantoja (2004) based on cognitive and behavioral learning strategies by Warr and Allen (1998). This scale, improved and validated by Brandão (2009), originally included 26 items, divided into five factors: extrinsic and intrinsic work reflection; seeking help through interpersonal relationships; seeking help in written material; reproduction; and practical application. It used a ten point scale, varying from 1 (never does) to 10 (always does). An exploratory factor analysis (EFA) resulted in four factors, in which two original factors – the seeking help through interpersonal relationships and practical application – formed only one factor. The other three factors were maintained in accordance with the original proposal. A subsequent confirmatory factor analysis (CFA) showed a good fit for the workplace learning strategies construct according to Hair, Black, Babin, Anderson, and Tatham (2009) ($\chi 2 = 268.479$, df = 96, $\chi 2$ / df = 2.797, RMSEA = 0.065, GFI = 0.929, AGFI = 0.900, TLI = 0.912, CFI = 0.929).

Professional competency was measured by a previously identified list of 20 competencies. Each of these competencies was evaluated by a ten point scale, varying from 1 (does not master the

competency) to 10 (fully masters the competency). The result of the CFA (Table 1) indicated three factors in the competency construct: work-oriented behavioral competencies; technology-oriented behavioral competencies; and service-oriented behavioral competencies, including 14 competencies. Six competencies were discarded because they did not present factor stability; *i.e.*, low commonality, a factor-load shared between group, a load lower than 0.4, or multicolinearity with another item (Hair *et al.*, 2009). A subsequent confirmatory factor analysis showed an adequate fit ($\chi 2$ = 219.030, df = 74, $\chi 2$ / df = 2.960, RMSEA = 0.068, GFI = 0.932, AGFI = 0.904, TLI = 0.931, CFI = 0.944).

Table 1

ICT-based Professional Competencies Scale Factor Structure

Competencies	Loading	Mean	SD
Work-Oriented Behavioral Competencies (α = 0.85)			
· Show due attention when using the systems and equipment in my daily work.	0.612	8.853	1.274
· Ability to communicate clearly & objectively with my colleagues at work.	0.674	8.834	1.367
· Contribute to the quality of the hospital services by performing my activities at work to the best of my abilities.	0.758	8.797	1.363
· Willingness to learn new skills & knowledge needed to carry out my activities at work.	0.77	9.059	1.254
· Show ability to work in a team.	0.809	9.086	1.192
Service-Oriented Behavioral Competencies (α = 0.82)			
· Describe the characteristics of the products, & services offered by the hospital.	0.682	8.274	1.574
· Identify the contribution made by the implantation of new technologies to improve the hospital's quality of service.	0.705	7.833	1.819
· Correctly describe the functionality of the systems, equipment, & technological resources used in my daily life at the hospital.	0.734	7.914	1.807
· Describe the contributions of the work carried out in my sector to improve the hospital's quality of service.	0.799	7.663	1.757
Technology-Oriented Behavioral Competencies (α = 0.83)			
· Identify solutions for problems caused by the inadequate use of the systems and equipment used in the workplace.	0.527	7.852	1.84
· Handle systems, equipment, & technological resources correctly at work on a daily basis.	0.683	8.565	1.459
· Insert data into the systems correctly and fully in accordance with the standards required by the hospital	0.702	8.277	1.68
· Maintain and duly update the systems I use at work.	0.718	8.282	1.779
· Ability to quickly locate information in the systems or technological resources that I use at work.	0.824	8.019	1.731

Note. Research data.

Factor 1 was called Work-Oriented Behavioral Competencies and was defined as: behaviors directed towards showing positive attitudes in relation to work, the team and the organization. According to Table 1, this factor presented a *Cronbach* Alpha equal to 0.85, with a load item factor of between 0.612 and 0.809. Factor 2 was called Service-Oriented Behavioral Competencies and defined as: behaviors directed towards recognizing that work contributes towards the service provided by the

organization. According to Table 1, this factor presents a *Cronbach* Alpha equal to 0.83, with a load item factor between 0.682 and 0.799. Factor 3 was called Technology-Oriented Behavioral Competencies and defined as: behaviors directed towards using ICT in the workplace. In accordance with Table 1, this factor presented a *Cronbach* Alpha equal to 0.83, with a load item factor of between 0.527 and 0,824.

In order to check the scales discriminant validity for workplace learning strategies and professional competencies, we applied Fornell and Larcker's (1981) approach contrasting the square correlation between each pair of factors with the extracted variances from each factor. In all cases the variance extracted was greater than its square correlation with other constructs. This result supported discriminant validity for both constructs (Hair *et al.*, 2009).

We included the following as controlled variables: age; level of education; working tenure (in the sector and at the hospital); and weekly working hours.

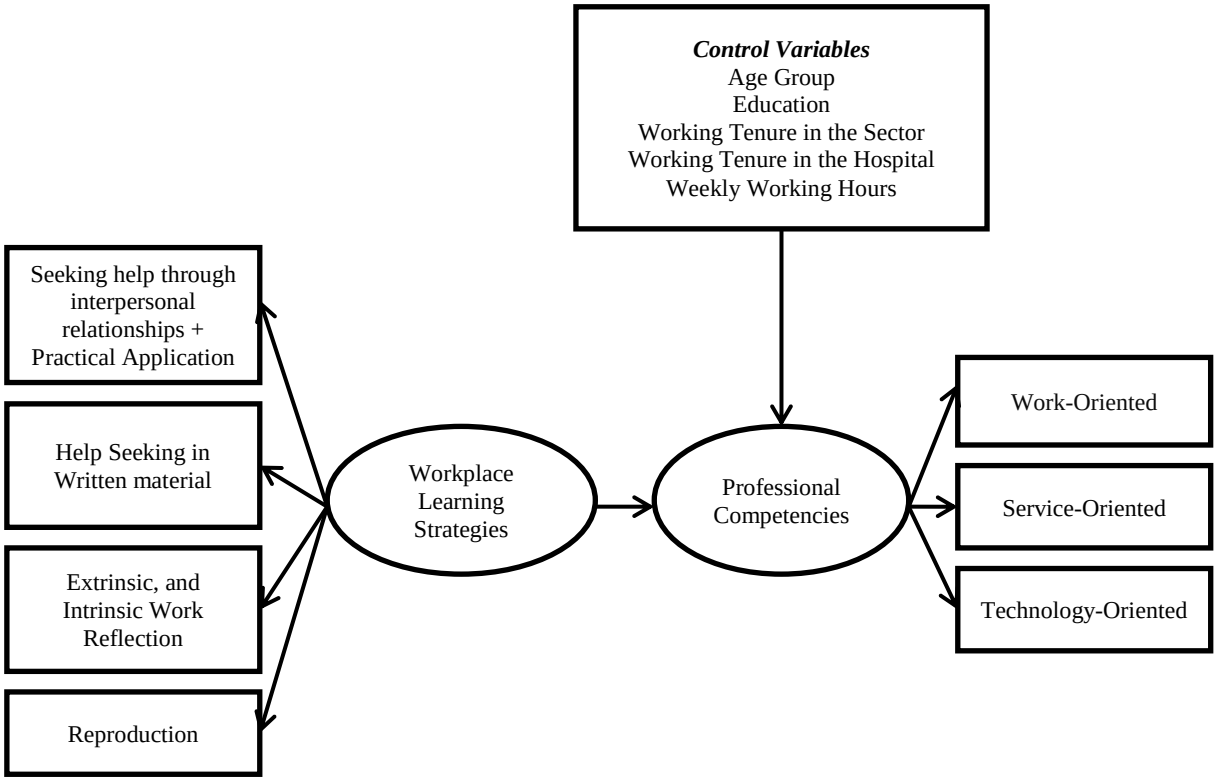

Figure 1. Structural Investigation Modeling.

Findings

A structural equation modeling analysis was undertaken using AMOS (Byrne, 2001) software and the **maximum-likelihood** (ML) method. Looking for more parsimony, the model's *parceling* item approach was used, as recommended by Bagozzi and Edwards (1998). The model showed a good fit ($\chi 2 = 95.489$, df = 47, $\chi 2$ / df = 2.042, RMSEA = 0.050, GFI = 0.964, AGFI = 0.940, TLI = 0.950, CFI = 0.965). Estimated parameters are presented in Table 2. Note that the relationship between workplace learning strategies and professional competencies is positive and significant ($\beta = 0.646$; $p<0.01$), registering a high loading. This result supports the hypothesis. The control variables do not present a significant impact on the competencies.

Table 2

Estimated Parameters of the Structural Investigation Model

Relation	Standard Charge Factor	*t-value*
Workplace Learning Strategy >>ICT-Based Professional Competencies	0.646**	9.12
Age group >> ICT-Based Professional Competencies	0.026	0.531
Education >> ICT-Based Professional Competencies	-0.055	-1.204
Working tenure in the sector >> ICT-Based Professional Competencies	0.005	0.083
Working tenure in the Hospital >> ICT-Based Professional Competencies	0.093	1.417
Weekly working hours >> ICT-Based Professional Competencies	0.009	0.205

Note. Research data.
** = p<0.01

In order to verify the impact of each workplace learning strategy on each professional competency, we ran a set of linear regressions. Table 3 presents the results.

Table 3

Standard Coefficients from Linear Regression

Variable	Work-Oriented Behavioral Competencies	Technology-Oriented Behavioral Competencies	Service-Oriented Behavioral Competencies
Learning Strategies			
· Seeking help through interpersonal relationships, & Practical Application	0.349**	0.221**	0.293**
· Help Seeking in Written Material	-0.134**	-0.044	-0.066
· Extrinsic and Intrinsic Work Reflection	0.290**	0.306**	0.239**
· Reproduction	0.024	0.071	0.074
Control Variables			
· Age group	0.082	0.009	0.007
· Education	-0.043	-0.068	-0.062
· Working tenure in the Sector	0.008	0.004	-0.020
· Working tenure at the Hospital	-0.003	0.121	0.082
· Weekly working hours	-0.030	-0.005	-0.036
R^2	0.252**	0.235**	0.214**

Note. Research data.
** = p<0,01.

It was noted that all the models analyzed presented a significant R^2. It should also be pointed out that none of the control variables presented a significant effect on the professional competencies, consistent with the structural equations analysis. According to the theory presented, each of the competencies demonstrated support from different types of learning strategies.

Work-oriented behavioral competencies were positively and significantly impacted by seeking help through interpersonal relationships and practical application (β=0.349; p<0.01) and by extrinsic and intrinsic work reflection (β=0.290, p<0.01) learning strategies. On the other hand, the help seeking in written material learning strategy had a negative effect on the same competency (β=-0.134; p<0.01). This could be explained by the fact that documents, manuals, computer programs and other non-social sources may not indicate expected work behavior.

Similarly, technology-oriented and service-oriented behavioral competencies were positively and significantly impacted by seeking help through interpersonal relationships and practical application (β=0.221; p<0.01; and β=0.293; p<0.01, respectively) and by extrinsic and intrinsic work reflection (β=0.306, p<0.01; and β=0.239, p<0.01, respectively) learning strategies. However, the order of predictor relevance is inverted. Technology-oriented behavioral competencies, for instance, are strongly influenced by extrinsic and intrinsic work reflection. In contrast, the service-oriented behavioral competencies intensely require learning strategies related to extrinsic and intrinsic work reflection, as indicated by Warr and Allan (1998).

Additionally, it must be noted that the reproduction learning strategy did not show a direct impact on any of the competencies. However, the reproduction strategy adequately comprises the general learning strategies construct in confirmatory factor analysis. So, it is conceivable that this strategy in particular can help in sustaining and strengthening the other learning strategies. It should be emphasized that the correlation coefficients between learning strategies were all positive and significant. It is also true for the correlation between learning strategies and professional competencies (see Table 4).

Table 4

Correlations between Learning Strategies and ICT-Based Professional Competencies

Construct	1	2	3	4	5	6
Learning Strategies						
1. Seeking help through interpersonal relationships and Practical Application	-					
2. Help Seeking in Written Material	0.382**	-				
3. Extrinsic and Intrinsic Work Reflection	0.531**	0.510**	-			
4. Reproduction	0.425**	0.457**	0.485**	-		
ICT-Based Professional Competencies						
5. Work-Oriented	0.456**	0.162**	0.420**	0.255**	-	
6. Service-Oriented	0.395**	0.231**	0.439**	0.296**	0.552**	-
7. Technology-Oriented	0.419**	0.206**	0.398**	0.287**	0.579**	0.640**

Note. Research data.
** = p<0.01.

Conclusions and Recommendations

Broadly speaking the results obtained confirm the hypothesis that learning strategies predict professional competencies in the workplace. In addition, the results indicate that the performance of ICT-based professional competencies is determined by the way in which respondents think, change and apply their knowledge, skills and attitudes at work, showing that cognitive learning efforts are made when they are faced with new information and technological paradigms, thus confirming the findings of Moraes (2010) and Brandão (2009).

As suggested by Djellal and Gallouj (2005), the results show that learning in hospitals is influenced by the dynamic and complex nature of the interactions between providers and users. In addition, technological innovation in hospitals generates opportunities for exchanging and creating knowledge and experience between doctors and other health professionals, since the Seeking help through interpersonal relationships and Practical Application learning strategies predict the expression of the competencies studied. Thus, in accordance with Hunter *et al.* (2008), hospital professionals learn from adopting behavior directed towards interaction between work colleagues, so as to facilitate the transfer of knowledge that is relevant to the practice of their daily tasks.

The study showed that intrinsic and extrinsic reflection allows for a type of learning that integrates the identified competencies and widens a professional's perception in relation to the impact of his/her performance as a service provider, irrespective of which sector or department they work in. These results reinforce Fraser's findings (2006), which show that individual learning in hospitals is also marked by reflection related to matters learned and their applicability and congruence with workplace challenges.

The Help Seeking from Written Material learning strategy was not shown to be effective in this study, since the search for documents, manuals, computer programs and other non-social sources may not be a formal indicator of the behavior expected in working relationships. Thus, it is seen that innovation in hospitals generates more opportunities for exchange and creation of knowledge and experiences between health professionals (Boaden & Joyce, 2006; Menachemi *et al.*, 2007; Tomasi, Facchini, & Maia, 2004) than searching in documental sources. The repetition of assistance protocols is also an alternative to learning in hospitals (Goldman *et al.*, 2009), but the results show that in spite of the importance of following assistance protocols, professionals in hospitals still seek social interaction as the main source of workplace learning.

The article shows that learning strategies help ensure that professional competencies arising from innovation are developed and applied in hospitals. In general terms, it may be inferred that learning in dynamic environments, such as hospitals, can be encouraged and facilitated by means of actions centered on learning through interaction between different professionals. In addition, it is salutary that hospital managers encourage reflection based on learning mechanisms as a means to strengthen professional practices, whether related to medical assistance or hospital administration.

The reach of this study's objective makes it possible to list several recommendations for future research work. It is recommended that research should be undertaken to analyze: (a) the effects of acquiring competencies in employability, productivity and quality in hospitals; (b) the relationship between learning strategies and competencies in accordance with the perceptions of doctors and other hospital assistance and intervention professionals; (c) to examine how specific learning strategies and competencies are related; and (d) to describe how informal interactions impact the acquisition and expression of competencies in hospitals.

As a practical recommendation it is suggested that learning and the application of competencies in the workplace be promoted so that investments in ICT be converted into improvements in the quality and productivity of hospital services. In order to do this, it is important that hospital administrators work on individual and organizational aspects so as to encourage professional development and to remove barriers, thereby ensuring improved performance in the workplace.

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