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Leadership of learning and reflective practice:

An exploratory study of nursing managers

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Abstract

Although the role of leadership has been emphasized in facilitating learning in the workplace, there is limited systematic research directly linked to leadership and learning. This study investigated the characteristics of leadership behaviors that facilitate workplace learning, using data from a survey of 228 nursing managers in 22 hospitals. Results of structural equation modeling indicate that encouraging reflective practice plays a central role in enhancing workplace learning, and reflective practice was facilitated by clarifying the mission of the unit and promoting role modeling. The findings suggest that reflective practice combined with goal setting and social learning promotes workplace learning. The theoretical and practical implications of the findings are discussed.

Keywords

Leadership of learning, nursing manager, reflective practice, transformational leadership, workplace learning

Introduction

The literature of workplace learning has expanded in volume and across diverse fields covering organization and management, sociology of work, labor, adult education, and human resource development (Fenwick, 2008). Considering the emergent notion of learning as the process of becoming a competent participant in a social and organizational process (Brown and Duguid, 1991; Lave and Wenger, 1991; Wenger, 1998), new opportunities for research and discussion in organizational learning have been provided by the rapid shift in focus toward workplace activities and work practices (Easterby-Smith et al., 2000).

In facilitating learning in an organization, the role of leadership has previously been emphasized. Creating the type of conditions that facilitate and sustain a favorable level of

collective learning is one of the greatest challenges for leadership at all levels in organizations (Yukl, 2009).

Despite its importance, there has been limited systematic research directly linking leadership and learning (Berson et al., 2006; Vera and Crossan, 2004; Waldman et al., 2009). In past research, the leadership-learning relationship has been investigated in terms of transactional-transformational leadership (Waldman et al., 2009) and critical management and reflexivity (Cunliffe, 2009). As there is no established scale on leadership of learning at the work unit level, it is necessary to conduct exploratory studies that examine managers who have good reputations for promoting learning in the workplace. The results should be compared with previous theoretical models of leadership to develop theory on leadership of learning.

The primary goal of this study was to clarify the characteristics of leadership behavior that facilitate workplace learning in medical organizations using data from a survey of nursing managers. This study focuses on learning at the work-unit level because the effect of leadership on learning seems to be stronger at the work-unit level than at the organizational level. In this article, leadership of learning is defined as leadership behaviors that facilitate learning in the workplace.

This study differs from previous work in the following three ways. First, leadership of learning was investigated in an exploratory way. Specifically, items on leadership behaviors were collected by interviewing managers who have good reputations for promoting workplace learning, and these were analyzed using data from a questionnaire using a scale-development method. Second, the present research examined the sequential relationship among leadership dimensions rather than analyzing them in parallel. By studying the sequential relationship among dimensions, it may be possible to find a mechanism for leadership of learning in the workplace. Third, this study focused on leadership behaviors that facilitate not only transformation or improvement of organizational routines, which is emphasized in research on transformational leadership, but also individual development in the workplace.

Nursing departments were selected as research sites because (1) nurses are required to continuously learn to adapt to changing environments, (2) nursing managers play important roles in promoting teamwork to provide high quality nursing services, and (3) nursing managers have clear responsibilities for specific hospital wards as professionals. These features allowed us to explore the leadership of learning in professional medical organizations.

The article is organized as follows. First, the literature on workplace learning, leadership of learning, and reflective practices is reviewed. Next, a research question is proposed based on the literature review. Then, the research method involving the survey of nursing managers is presented. Finally, results are presented and discussed from theoretical and practical viewpoints.

Theoretical background

Workplace learning

Definitions of learning have often been lacking because learning represents phenomena ranging from individual information acquisition to cultural transformation or even political emancipation (Fenwick, 2008).

The scholars studying workplace learning have emphasized the work environment as an important learning site and have assumed that the learning potential of a specific work environment can be recognized, guided, and better exploited by analyzing existing activities, processes, and characteristics that currently shape the work environment (Lans et al., 2008).

Previous studies have assumed that workplace learning consists of three elements: individuals, groups, and learning outcome. According to Garavan et al. (2002), workplace learning refers to a set of processes that occur within specific organizational contexts and involve the acquisition and assimilation of integrated clusters of knowledge, skills, values, and feelings that result in fundamental changes in the foci and behaviors of individuals and teams (p. 61). This definition involves components of organizational process, knowledge acquisition, and behavioral changes of individuals and teams.

Workplace learning can be viewed as group-level learning or a sub-process of organizational learning. Edmondson (2002) argued that group-level analyses of organizational learning are important to connect individual-level factors such as cognition and behavior to organizational-level outcomes. Reviewing the research on workplace learning, Fenwick (2008) found that the literature includes both individual learning (e.g. individual knowledge acquisition and individual human development) and collective learning (e.g. sense making/reflective dialogue and communities-of-practice).

With regard to collective learning, Zellmer-Bruhn and Gibson (2006) defined team learning as the extent to which a team created new processes and practices. Additionally, Clarke (2005) distinguished between workplace learning environment and workplace learning outcome, where the former refers to the practices and behaviors that facilitate the latter. These studies suggest that group-level learning involves not only the creation of new processes and practices but also improvements in group performance.

Based on the studies described above, the present research defines workplace learning in terms of three aspects: individual learning (skill development of individual members), group level learning (process improvement), and learning outcome (quality of work unit performance).

Leadership and learning

Although little research has examined the linkage between leadership and organizational

learning (Berson et al., 2006; Waldman et al., 2009), two empirical studies were published in the special issue of the *Leadership Quarterly* in 2009. These articles are based on Bass' (1985) framework of transformational/transactional leadership. According to Vera and Crossan (2004), the concept of transformational and transactional leadership builds on prior research on relations-oriented versus task-oriented leadership (Fiedler, 1967), path-goal theory (House and Mitchell, 1974), and charismatic or visionary leadership (House and Shamir, 1993; Westley and Mintzberg, 1989).

Avolio et al. (1999) showed that transformational leadership consists of four dimensions. Specifically, the transformational leader (1) behaves in admirable ways that cause followers to identify with the him/her by displaying conviction, taking stands, and appealing to followers on an emotional level (*charisma, or idealized influence*); (2) challenges followers with high standards, communicates optimism about future goal attainment, and provides meaning to the task at hand (*inspirational motivation*); (3) stimulates and encourages creativity in her/his followers by challenging assumptions, taking risks, and soliciting followers' ideas (*intellectual stimulation*); and (4) attends to each follower's needs, acts as a mentor or coach to the follower, and listens to the follower's concerns and needs (*individualized consideration*) (Avolio et al., 1999; Judge and Piccolo, 2004).

In contrast, transactional leadership has three dimensions. Specifically, the transactional leader (1) clarifies expectations and establishes the rewards for meeting these expectations (*contingent reward*); (2) monitors followers' behavior, anticipates problems, and takes corrective actions before the behavior creates serious difficulties (*management by exception - active*); and (3) waits until the behavior has created problems before taking action (*management by exception – passive*) (Avolio et al., 1999; Judge and Piccolo, 2004).

In general, transformational leadership is more likely to emerge in times of distress and change, whereas transactional leadership is more likely to be observed in a well-ordered society (Bass, 1985).

Of the two empirical studies in the *Leadership Quarterly* in 2009, one examined leadership at the organizational level, and the other at the team level. Jansen et al. (2009) examined executive directors of Fortune Global 500 firms and found that transformational leadership had a positive effect on exploratory innovation (pursuing new knowledge and developing products and services for emerging customers and markets) but had no significant effect on exploitative innovation (building on existing knowledge resources and extending existing products and services for current markets), whereas transactional leadership had a positive effect on exploitative innovation but a negative effect on exploratory innovation.

Nemanich and Vera (2009) investigated teams in a large multinational firm undergoing integration after acquisition and found that transformational leadership has a positive impact

both on a learning culture characterized by psychological safety, openness to diverse opinions, and participation in decision making and on the ability to explore new capabilities while exploiting existing ones in teams. They argued that transformational leadership encourages employees to engage in creative processes as well as overcome the resistance to adopting new institutionalized routines in turbulent environments such as during an acquisition.

The leadership-learning relationship at the team level has also been studied by Edmondson and colleagues without using the transformational/transactional leadership framework. Edmondson (2003) examined interdisciplinary operating room teams learning to use a new technology for cardiac surgery and found that the most effective leaders helped teams learn by articulating a motivating rationale for change and for speaking up, and by creating psychological safety through acknowledging their own fallibility.

Based on a qualitative field study of 16 hospitals implementing an innovative technology for cardiac surgery, Edmondson et al. (2001) reported that successful implementers promoted shared meaning and process improvement through reflective practice, which includes reviewing data, discussing past cases, planning next cases, and suggesting technical process changes through formal meetings, informal conversations, and shared reviews of relevant data, asking: 'What are we learning? What can we do better? What should we change?'

The studies suggested that leadership of learning at the team level involves (1) articulating the meaning of goals, (2) creating psychological safety, and (3) facilitating reflective practice. These characteristics seem to relate more to transformational than to transactional leadership. However, leadership of learning at the group level should have unique features that differ from those of transformational leadership for two reasons. First, not all workplaces are in the midst of distress and change. As Bass (1985) indicated, transformational leadership is more appropriate in a turbulent environment. Second, workplace learning involves not only transformation or improvement of organizational routines but also individual development of members. Therefore, it is necessary to conduct additional empirical research without using the framework of transformational/transactional leadership.

Reflective practice

As Edmondson et al. (2001) reported, the role of reflective practice has been emphasized in the research of professional organizations. Because this study focuses on leadership of learning in medical organizations, the following is a brief literature review of reflective practice.

The concept of reflective practice was proposed by Schon (1983). This concept was applied initially in the field of nursing and teacher education and is increasingly being applied across the professions (Moon, 2004). Raelin (2002) defined reflective practice as the practice of periodically stepping back to consider the meaning of what recently transpired to others and to

oneself in our immediate environment. However, reflective practice includes not only ex-post-facto reflection, in which one leans back and thinks about the day or the situation at hand but also in-the-moment reflection, i.e. reflection within the immediacy of practice (Yanow, 2009). Schon (1983) called the latter type reflection-in-action, which 'consists in on-the-spot surfacing, criticizing, restructuring, and testing of intuitive understandings of experienced phenomena; often it takes the form of a reflective conversation with the situation' (pp. 241–242). The reflective practitioner explores other ways of seeing and adopts an attitude of inquiry rather than determining answers based solely on positional authority (Yanow and Tsoukas, 2009).

Reflection is concerned with the process or means by which individuals make sense and reconstruct the meaning of what has been planned, observed, or achieved in practice. Therefore, it is essential to learning to convert tacit experience into explicit knowledge, leading to an understanding of experiences that may have been overlooked in practice, allowing us to critique our taken-for-granted assumptions, and encouraging us to be receptive to alternative ways of reasoning and behaving (Cunliffe, 2009, DeFillippi, 2001; Gray, 2007; Ramsey 2011; Xing and Sims, 2012; Yip and Raelin, 2011).

Based on previous literature, Kember et al. (2000) classified reflection into four hierarchical levels: habitual action (activity that is performed automatically or with little conscious thought), understanding (reaching an understanding of a concept without reflecting upon its significance in personal or practical situations), reflection (internally examining and exploring an issue of concern, triggered by an experience), and intensive reflection (a higher level of reflective thinking through which we can transform our meaning framework).

Using Kember et al.'s (2000) framework, Peltier et al. (2005) conducted a survey of MBA students and found that reflection and intensive reflection were positively correlated, whereas habitual action and understanding were negatively correlated with program outcomes.

Although studies by Schon (1983) and others have mainly addressed the utility of reflection by individual practitioners, recent research has drawn attention to collective reflection within organizations (Jordan et al., 2009; Raelin, 2001; Reynolds and Vince, 2004; Vince, 2002). Hoyrup and Elkjaer (2006) concluded that to conceptualize the complex process of learning at work, the concept of reflection should be recognized at different levels, namely at the individual, group, and organizational level.

Leaders play important roles in the promotion of collective reflection in the workplace. Cunliffe (2009) examined leadership in terms of the philosophical themes of relationalism, ethics, and reflexivity. She proposed the idea of a 'philosopher leader', who encourages organizational members to think more critically and reflexively about themselves, their actions, and the situations they find themselves in. This is one leadership style that facilitates workplace learning.

Although the role of reflective practice has been stressed in previous works, little research has been conducted on what might make one practitioner more inclined than another not to stop at certainty but to be open to engaging in reflective practice (Yanow, 2009). This study is concerned with the leadership behaviors that promote reflective practice in the workplace.

Summary

Past research has suggested that workplace learning involves individual learning, group-level learning, and learning outcome. Although some empirical studies have investigated the link between leadership and learning at the organizational and team levels, little research has examined the leadership-learning relationship in the workplace. Previous work has indicated that reflective practice plays an important role in facilitating learning, yet few quantitative studies have examined this. The present study investigated the inter-relationships between leadership behaviors and workplace learning using survey data from nursing managers.

The primary goal of this study was to clarify the characteristics of leadership behavior that facilitate workplace learning in medical organizations. As the research presented is exploratory in nature, the research model is developed and tested during the analysis. The following research question is proposed.

RQ: What kinds of leadership behaviors promote workplace learning in medical organizations?

Methodology

Preliminary research

To collect data on leadership behaviors that facilitate workplace learning, 13 mid-level nursing managers with good reputations as leaders who facilitated learning in the workplace were interviewed in seven hospitals (six acute care hospitals and one chronic care hospital). Senior nursing managers of the participating hospitals were asked to select competent middle-level nursing managers in terms of promoting staff development and improving working processes and the quality of nursing care in their wards. The interviews lasted 65 minutes on average. All interviews were tape-recorded and transcribed.

Before the interviews, interviewees as well as some of their subordinates and superiors were asked to respond to open-ended questionnaires on the leadership behaviors of nursing managers. Based on the results of the surveys, the nursing managers were asked in the interviews to describe what they do to develop young and core nursing staff and to improve nursing processes and quality of nursing care in the workplace.

From the interview and survey data, 199 aspects of leadership behavior were extracted, and

a questionnaire was prepared.

Sample and procedures

The general managers of hospitals were recruited to participate in this study via conference and seminar attendance. Nursing managers at nursing conferences and seminars were asked to participate in the research in exchange for feedback that diagnosed the strengths and weaknesses of each hospital. The general managers of 22 hospitals applied to take part in the research. The hospitals were located across Japan and included five public hospitals, nine private hospitals, and eight Red Cross hospitals. The average size of hospital was 474.8 beds (SD = 218.3). Of the sample, 21 were acute care hospitals, and one was a chronic care hospital.

Data were collected by distributing self-administered questionnaires to nursing managers in charge of specific wards and to their superiors (general nursing mangers or deputy general nursing managers). Nursing managers were asked to respond to the questions in reference to their own leadership behaviors, whereas their superiors were asked to evaluate the present conditions of the wards run by the nursing managers (staff development, process improvement, and the quality of nursing care). Participants received a cover letter explaining the study's purpose and methods, and the process to participate in the study. The letter also explained that the return of completed questionnaires by participants indicated consent to participate. Participants were requested to sign their name in the questionnaires. The signature was required because it was necessary to match data from nursing managers with data from their superiors in the analysis. Of the 256 questionnaires distributed, 255 were returned. A total of 228 questionnaires were considered usable after removing missing answers (final response rate was 89.0%). One of the reasons for the high response rate may be that most senior nursing managers explained the purpose of the survey to, and made an agreement with staff nurses to get their participation in the survey. The average nurse experience in the sample was 25.26 years (SD = 6.69), and 94.9% were women.

Measures

Workplace learning. Workplace learning. Based on the work of Fenwick (2008), Zellmer-Bruhn and Gibson (2006), and Clarke (2005), workplace learning was measured with three items: 'development of young and core nursing staff', 'process improvement', and 'quality of nursing services'. Respondents (general managers or deputy general managers) were asked about their perceptions of workplace learning in the nursing mangers' units using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The Cronbach's alpha was 0.75. The scores for each item were used as observable variables for workplace learning.

Leadership of learning. The scale of leadership of learning was developed based on items that were identified in the preliminary research. The procedures, partly based on Churchill's (1979) scale development paradigm were as follows. First, a correlation analysis was conducted between each of the 199 leadership of learning items and the workplace-learning score (averaged score of the three items). Second, items addressing leadership of learning that were significantly correlated with workplace learning were selected ($p < 0.01$). Third, factor analyses (principal factors method with oblique rotation) were conducted with the 55 remaining leadership of learning items. Items were eliminated when loadings fell below 0.40 on all factors and if the Cronbach's alpha of a dimension increased when the item was deleted. This procedure was repeated until the Cronbach's alphas of all factors were above 0.70.

Based on this procedure, leadership-learning items were grouped into five dimensions: 'encouraging reflective practice', 'supporting team activities', 'promoting role modeling', 'clarifying the mission of the unit', and 'clarifying individual goals' (Appendix 1). The Cronbach's alphas for these dimensions were 0.83, 0.87, 0.82, 0.77, and 0.78, respectively. The scores for each item were used as observable variables for each dimension of leadership of learning.

Table 1. Descriptive Statistics and Correlations

Variable	Number of items	Mean	Standard deviation	1	2	3	4	5	
1 Workplace learning	3	3.57	0.57	(0.75)					
2 Encouraging reflective practice	5	3.88	0.57	0.30 **	(0.83)				
3 Supporting team activities	4	3.92	0.73	0.21 **	0.33 **	(0.87)			
4 Promoting role modeling	4	3.63	0.69	0.29 **	0.55 **	0.39 **	(0.82)		
5 Claryfying mission of the unit	4	4.11	0.61	0.22 **	0.60 **	0.36 **	0.51 **	(0.77)	
6 Claryfying individual goal	4	3.86	0.59	0.16 *	0.55 **	0.42 **	0.47 **	0.59 **	(0.78)

Note: Coefficient alpha is presented along the diagonal. * p<.05, ** p<.01

Validation of the measures

The internal consistency of the constructs was evaluated by the Cronbach alpha coefficient. Table 1 shows the correlations, descriptive statistics (means, standard deviations), and reliability estimates. All scales met the recommended reliability coefficient of 0.70 (Nunnally, 1978).

To evaluate the convergent validity of the model constructs, a confirmatory factor analysis (CFA) with six latent constructs of learning (workplace learning, encouraging reflective practice, supporting team activities, promoting role modeling, clarifying the mission of the unit, and clarifying individual goals) and a total of 24 measures was conducted. The results show that all items significantly loaded on the respective constructs ($p < 0.001$), and the goodness of-fit

statistics for the model were as follows: $\chi 2$ = 400.60, degrees of freedom (*df*) = 237, comparative fit index (CFI) = 0.92, root mean square error of approximation (RMSEA) = 0.05, and root mean square residual (RMR) = 0.03. That all the items significantly loaded on the assigned constructs and that the fit indices were relatively good provides evidence of convergent validity.

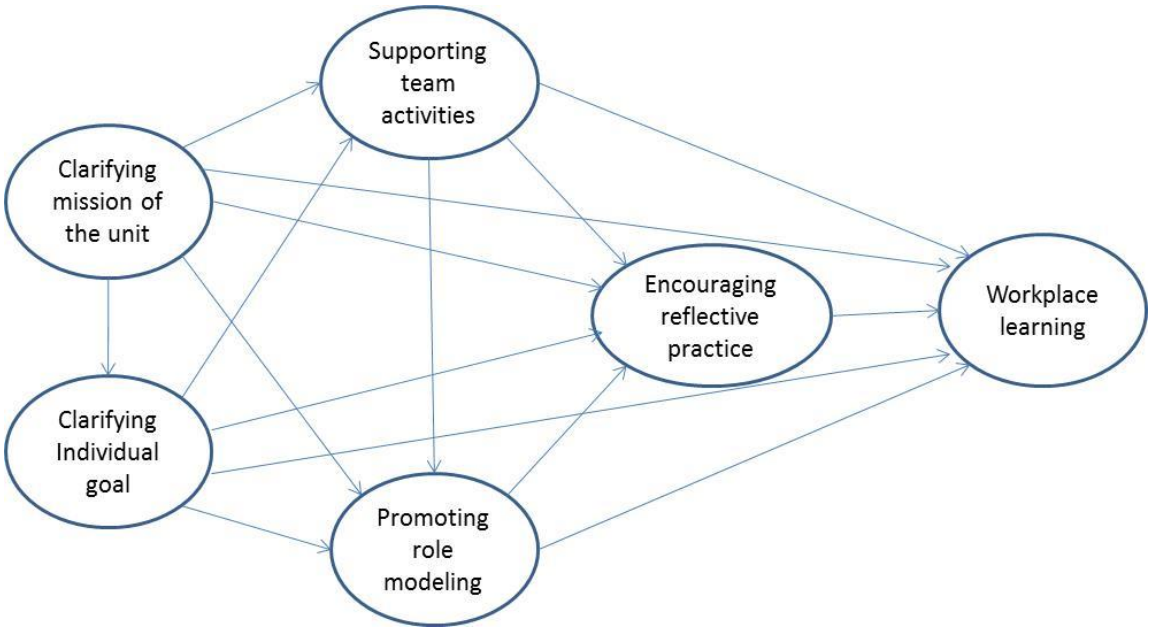


Figure 1. Research Model

Research model

A sequential model shown in Figure 1 was proposed. This model assumes that 'clarifying the mission of the unit' and 'clarifying individual goals' influence 'supporting team activities' and 'promoting role modeling', which in turn affect 'encouraging reflective practice'.

Results

Structural equation modeling (SEM) was conducted to test the proposed research model, as SEM provides a simultaneous estimation of the model parameter estimates and overall model fit estimates. Scores for each item were considered observable indices of workplace learning, encouraging reflective practice, supporting team activities, promoting role modeling, clarifying the mission of the unit, and clarifying individual goals.

The fit of the model indicated acceptable agreement with the covariance in the data: $\chi 2$ = 400.60, degrees of freedom (*df*) = 237, comparative fit index (CFI) = 0.92, root mean square error of approximation (RMSEA) = 0.05, and root mean square residual (RMR) = 0.03.

The standardized path coefficients for the model are presented in Figure 2 and Table 2. Workplace learning was positively associated with encouraging reflective practice (0.31, $p < 0.05$), indicating that workplace learning is activated when nursing managers help staff nurses reflect upon their practices.

Encouraging reflective practice was positively related to clarifying the mission of the unit (0.33, $p < 0.01$) and promoting role modeling (0.38, $p < 0.01$), suggesting that nursing managers can help staff nurses reflect on their practices by clarifying the ward mission and providing role models. Promoting role modeling was positively associated with clarifying the mission of the unit (0.29, $p < 0.05$), clarifying individual goals (0.41, $p < 0.05$), and supporting team activities (0.15, $p < 0.05$) indicating that nursing managers can help staff nurses to learn from role models when managers clarify both ward mission and goals of staff nurses and support team activities. Supporting team activities was positively related to clarifying individual goals (0.65, $p < 0.05$), indicating that nursing managers can support team activities when they help individual staff nurses to develop clear goals. Clarifying the mission of the unit was positively related to clarifying individual goals (0.51, $p < 0.01$), suggesting that nursing mangers can help staff nurses to know their own goals by clearly articulating the ward mission.

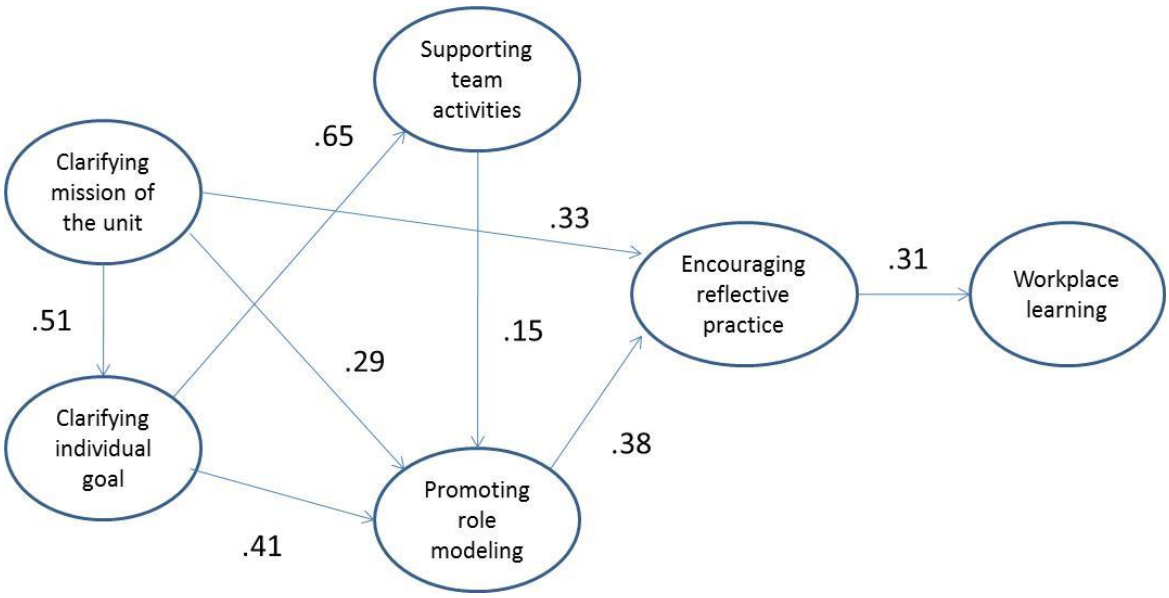


Figure 2. Path estimates.

Note: Value represents standardized estimate. Insignificant paths are omitted for clarity.

Table 2. Structural model results.

Structural Path			Estimate	t-value	
mission of the unit	--->	individual goal	0.51	6.54	***
mission of the unit	--->	team activities	0.27	1.59	
individual goal	--->	team activities	0.65	2.50	*
mission of the unit	--->	role modeling	0.29	2.27	*
individual goal	--->	role modeling	0.41	2.03	*
team activities	--->	role modeling	0.15	2.22	*
mission of the unit	--->	reflective practice	0.33	2.88	**
individual goal	--->	reflective practice	0.26	1.53	
team activities	--->	reflective practice	0.01	0.26	
role modeling	--->	reflective practice	0.38	4.19	***
team activities	--->	workplace learning	0.14	1.80	
role modeling	--->	workplace learning	0.12	0.97	
reflective practice	--->	workplace learning	0.31	1.99	*
individual goal	--->	workplace learning	-0.30	-1.30	
mission of unit	--->	workplace learning	0.04	0.28	

Notes: Value represents standardized estimate. * p<.05; ** p < 0.01; *** p < 0.001.

Discussion

Few prior studies have been systematically conducted to examine the direct relationship between leadership and learning (Berson et al., 2006; Vera and Crossan, 2004; Waldman et al., 2009). A major contribution of this study was to clarify the interrelated characteristics of leadership behaviors that facilitate workplace learning.

Theoretical implications

The findings of this study extend previous research on leadership of learning in three important ways. First, the results demonstrate the importance of facilitating reflective practice in leading workplace learning, which has not been recognized in past research on transformational or transactional leadership. Encouraging reflective practice may be a central characteristic in leadership of learning. It should be noted that the other four leadership dimensions affect workplace learning through encouragement of reflective practice. The scale used in this study includes items on ‘asking what the issues are’, ‘providing opportunities to think about their job’, and ‘making staff think the reasons and meanings of their conducts that they normally process without paying much attention’, which are equivalent to the concept of reflective practice proposed by Schon (1983). This leadership style has similar characteristics to Cunliffe’s (2009)

philosopher leader, which considers leadership a process of thinking more critically and reflexively about ourselves, our actions, and the situations we find ourselves in.

The findings also correspond to Edmondson et al.'s (2001) report that successful implementers of innovative cardiac surgery teams promoted shared meaning and process improvement through reflective practice. With reflective practice, we can convert tacit experience into explicit knowledge, understand experiences that may have been overlooked in practice, critique our taken-for-granted assumptions, and encounter alternative ways of reasoning and behaving (Cunliffe, 2009, DeFillippi, 2001; Gray, 2007; Ramsey, 2011; Xing and Sims, 2012; Yip and Raelin, 2011). For example, the scale of 'encouraging reflective practice' involves leadership behaviors such as encouraging people to think about the reasons behind and meanings of their behaviors. Reflective practice uses questions such as, 'Why does this have to be done this way?' to encourage nurses to think about patient interactions. These behaviors may be effective for articulating implied experiences and critiquing assumptions.

The present research showed that reflective practice, which is resolution through deeper understanding rather than problem solving (Pavlovich et al., 2009), plays a central role in activating workplace learning.

Second, this study revealed that reflective practice is closely associated with goal setting and role modeling. The results indicated that nursing managers promote reflective practice of staff nurses by clarifying the mission of the ward and promoting role modeling. This suggests that goal setting (Latham and Locke, 2007; Locke and Latham, 2002) and social learning (Bandura, 1977, 1986) are antecedents of reflective practice. It can be interpreted that group-level goals and role models may provide standards by which staff nurses appreciate and consider the meaning of their practices in the workplace. Staff nurses can reflect on the meanings of their behaviors if they understand what their work unit's goals are and how members should act. The results of this study indicate that leaders should play roles as 'managers of meaning' (Smircich and Morgan, 1982).

Finally, there are some similar characteristics between leadership of learning and transformational leadership. Specifically, 'promoting role modeling' and 'clarifying the mission of the unit' identified in this study approximately correspond to two dimensions of transformational leadership: 'idealized influence', or behaving in admirable ways that cause followers to identify with the leader and 'inspirational motivation', or challenging followers with high standards, communicating optimism about future goal attainment (Avolio et al., 1999; Bass, 1990; Judge and Piccolo, 2004; Kark et al., 2003; Piccolo and Colquitt, 2006; Shin and Zhou, 2003). However, leadership of learning has unique characteristics in that behaviors related to goal setting and role modeling are combined as tools for enhancing followers' reflective practice.

Managerial implications

The present research has managerial implications for enhancing workplace learning. First, to help staff members use reflective practices, managers should develop their own questioning skills, such as asking about what issues members are having and how these problems can be resolved. Managers should also encourage members to think about the reasons for, and meanings behind, their behavior. Managers with good questioning skills can promote reflective practices in the workplace.

Second, managers who hope to facilitate reflective practices in the workplace need to set clear missions and goals while creating role models; these can be standards or guidelines that allow staff to consider the meanings of their conduct. It is often difficult for staff members to reflect on their behavior without appropriate goals and models. It should be noted that setting a clear mission for the work unit and promoting role models have no direct impact on workplace learning. Linking goals, role models, and reflection are key for promoting workplace learning.

Third, managers should be aware that asking the staff questions is likely to produce a wide variety of explicit and implicit reactions, such as anxiety, defensiveness, expectation, surprise, and relief; questioning skills are often linked to power relationships in organizations. Even though managers may intend to be collaborative, hierarchical relationships still exist, and so staff may be unwilling to offer ideas that contradict the manager or question his/her authority and expertise. As Vince (2011: 342) states, employees often want to avoid conflict and risky suggestions, which 'encourages predictability and prescription, which limits the (public) emergence of new knowledge and the transformational potential of learning'. To promote appropriate reflective practices, managers must be sensitive to such power relationships and pay attention to the tensions and emotional reactions that can occur in reflective practice (Vince, 2011).

Limitations and future research

These findings should be considered in the light of their limitations. First, the data of this study were limited to nursing managers. It is possible that encouraging reflective practice plays a central role in leadership of learning because the sample of this study is managers in medical organizations. The questions raised in this study should be examined in various industries and cultures.

Second, as the concepts of leadership of learning and workplace learning and the scale for measuring them were developed for this study, more work is needed to validate the scale. Especially, the items on leadership of learning were extracted from the survey of nursing managers. By conducting the survey in different contexts, we could develop more reliable and

valid scales that could be applied to broader fields.

Third, the reason that there is no established scale for leadership of learning may be due to the limitation of quantitative research methods. Although investigating sequential relationships between leadership dimensions is one advantage of this study, the interactive and inter-subjective features of the leadership process could not be evaluated. To explore the interactive mechanism of leadership in learning, qualitative research should be conducted in the future.

Fourth, this study did not examine leadership behaviors related to power relationships and conflicts of interest in the workplace. Previous research has suggested that organizing critical reflection involves the analysis of power and control in organizations (Jordan et al., 2009; Reynolds, 1998; Vince, 2002). Thus, it is necessary to investigate leadership in learning in terms of power relationships in the workplace.

Finally, this study was exploratory, and the relationship between leadership of learning and other types of leadership remains unclear. As there is some resemblance between leadership of learning and transformational leadership, it is necessary for future research to compare leadership of learning scales with other existing scales such as those for transformational leadership and transactional leadership.

Conclusions

This article explored the characteristics of leadership of learning, using a survey of nursing managers. The theoretical contribution of this study is the examination of sequential relationships between leadership dimensions, rather than parallel analyses. Encouraging reflective practice plays a central role in facilitating workplace learning, and unit missions and role modeling in combination can be used to promote reflective practice in the workplace. Continued research on power relationships using qualitative methods should be conducted to advance our understanding of leadership of learning.

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Appendix 1

The scale of leadership of learning

F1: Encouraging reflective practice

Try to ask what the issues are and how they should be solved.

Confirm if the handling was appropriate for a patient and if he/she acted with his/her own volition.

Provide opportunities to think about nursing through the interaction with patients.

For people with experiences, after presenting the ideas as chief, ask them to talk about their ideas.

Encourage people to think about the reasons and meanings of behaviors that we normally perform without paying much attention using questions such as: 'Why does this have to be done in this way?'

F2: Supporting team activities

By arranging the occasions to exchange ideas, support the creation of a team that accepts difference in personalities.

When hosting a leader meeting, confirm progress toward achievement of team goals. .

Support team leaders in terms of member communication and training.

Ask for comments from leaders and sub-leaders of each team and adjust shift tables.

F3: Promoting role modeling

When instructing young staff members, first explain ideas and methods, then demonstrate them, and then let them try to under supervision before assigning the job.

For nurses with experience, after demonstrating how a chief manages the issue, let them practice to become familiarized with the procedure.

Confirm the presence of a nurse as a role model to foster pleasure in working as a nurse and to feel a sense of accomplishment.

For section chief, let him/her think about what he/she would do as a nursing manager.

F4: Clarifying mission of the unit

Clarify the goals for a ward to ensure that all staff share the same understanding.

Clearly present the vision of the nursing manager such as: 'This is the type of nursing that we want to provide'.

Ward policies and nursing manager's aims should be announced at individual training for

patient care and at unit meetings.
Constantly evaluate whether the decisions made in ward meetings, annual goals, and other plans are being properly executed.

F5: Clarifying individual goals
Considering what they want to do in the future, invite staff members to think about what they will do this year.
At the interview, confirm whether the person is becoming the person he/she wants to become as well as discussing his/her concerns and goals.
Through the interview, have the staff member visualize how he/she would like to be and develop evaluable indicators with him/her to measure progress toward those goals.
Allocate specific roles that are not fall on to nurses and support them when they cannot find what they want.