

Determining the relationship between organizational learning mechanisms and teachers' knowledge sharing behavior and professional development ability

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ABSTRACT

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This research reports the study that examined the relationship between organizational learning mechanisms and teachers' knowledge sharing behavior and professional development ability. In this study, two hundred and fifty teachers were selected using Cochran's formula and simple random sampling. Three kinds of questionnaires were used to collect the data. The results indicated that the condition of organizational learning mechanisms, knowledge sharing behavior and professional development ability in the first three years of high schools in Ardabil County is above average. Also, there is a positive relationship between the dimensions of organizational learning mechanisms and knowledge sharing behavior and a positive and significant relationship between the dimensions of organizational learning mechanisms (except for the dimension of learning utilization in working environment) and teachers' professional development ability. According to the results of multiple regression analyses, the dimensions of organizational learning mechanisms, determining development, and learning needs and providing them are respectively appropriate predictors for knowledge sharing behavior, determining development, learning needs, and learning environment. Finally, providing development and learning needs, respectively have the most impact on teachers' professional development ability.

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Introduction

Educational institutions are considered as one of the members of information society in the information arena due to dealing with technological advances and requiring appropriate skills and development ability to transfer, share and utilize knowledge more than ever. Accordingly, if educational institutions search for quality enhancement and deal with challenges, they need to change their functional structures and processes (Dever, 1997; Neefe, 2001). In order to

accomplish this goal, the best strategy is to change the functions and structures of educational institutions into learning organizations.

Organizational learning was initiated by Dearbron and Simon (1958). The idea of learning organization or organizational learning as one of the newest ideas in organization management in a highly complex and variable environment of today's world tries to answer the question that in such circumstances how organizations like educational organizations can function more effectively. Reviewing a bulk of research show that the most successful organizations are learning organizations, thus the center of new paradigm for the organizations is learning. In other words, those organizations which learn faster and better than the competitors are more successful (Stewart, 2001). Organizational learning occurs when the members of the organization act as learning factors and personal conceptions and organizational patterns react to organization's internal and external environmental changes through detecting and correcting errors and recording the results of this process (Argyris & Schon, 1978).

Organizational learning is a process through which the organization expands its new knowledge, demonstrates the potential to influence people, and improves the development ability of the organization (Jimenez-Jimenez & Sanz-Valle, 2011). The initial goal of organizational learning is to increase the quantity and quality of performance. Moreover, those organizations that learn faster will increase strategic development ability and enable the organization to enhance competitive advantage and improve the results. These organizational learning attitudes, behavior, and strategies are the guidance on long-term performance for the organizations (Garcia-Morales, Lopez-Martin, & Llamas-Sanchez, 2006).

Apart from those points about organizational learning, it is considered a sort of competence which requires all the organizations to consider them in the current competitive and variable environment. To that end, the infrastructures and ground for organizational learning need to be developed. These infrastructures include organizational structures and processes which create or improve learning opportunity. The whole ground is called organizational learning mechanisms which include the cultural and structural aspects of the organization. As expected, development and improvement is hard to achieve without these mechanisms. However, the most complete model for learning organization has been introduced by Armstrong and Foley (2003). They attempted to discover that how learning could lead to learning organization in working environment; thus, they identified organizational learning mechanisms. In their opinion, organizational learning mechanisms include four components of learning environment, identifying learning and development needs, meeting learning and development needs, and applying learning in the workplace (Armstrong & Foley, 2003).

Some researchers have described the necessity of learning in the organization as following: Organizational learning occurs when the personal knowledge is transferred to other people, so that they can use this positive knowledge in their organization's working activities. The organizations are required to identify, preserve, categorize, distribute and utilize knowledge as well as to express new thoughts. In fact, establishing knowledge in the organization improves employees' performance and leads to the success of organization and knowledge management. In the management literature, it is emphasized that organizational learning plays a leading role in increasing competitive advantage. Organizational learning is the most important way to improve knowledge management and performance in the long-term and in the near future. The

organization which utilizes individuals' development ability, commitment, and learning capacity at all the levels of the organization can assert its superiority (Beikzadeh, Fardiazar, & Fathi Bonabi, 2010). In knowledge-based enterprises, the knowledge, innovation, skill, and continuous learning play important roles (Allahyarifard & Abbasi, 2011). This study investigates the relationship between organizational learning mechanisms in schools and teachers' knowledge sharing behavior and professional development ability.

The Literature Review

Knowledge management is one of the most significant factors in employees' performance improvement, managers' success or failure, and organizations' competitive advantage during the third millennium. Reviewing the pertinent literature reveals that the balance between knowledge and other manufacturing resources is changing and knowledge comparison to other resources such as land, tools, machinery, and labour force is considered the most important factor in determining life standard (Okunoye & Karsten, 2002; Salo, 2009; Yeh, Lai, & Ho, 2006). Therefore, the role of knowledge management in organizations has changed into an important issue in strategic and tactical planning and decision-making, dynamic learning, problem-solving, and fulfilling the full potential of organization's assets (Anantatmula & Kanungo, 2010; Gan, Ryan, & Gurarajan, 2006; Okunoye & Karsten, 2002; Salo, 2009). This indicates the necessity of knowledge planning, knowledge organization, knowledge leadership, knowledge sharing, and access to knowledge in an effective and efficient way (Piri & Asefzadeh, 2006). However, the investigations show that most organizations do not effectively apply knowledge management as a strategic vision to their missions and goals and in case of applying, they have failed (Gholipour, Jandaghi, & Hosseinzadeh, 2010; Salo, 2009; Tabarsa & Ormazdi, 2008). According to the statistics, almost 84% of knowledge management programs have ended in failure and despite a large number of research on knowledge management, knowledge management implementation in the organization is still complicated and difficult (Akhavan, Oliyaee, Dastranj Mamaghani, & Saghafi, 2011).

In educational places such as schools which have knowledge inside themselves, the main focus of their activities is on learning, creating, and distributing knowledge. They, which are vitally important, are regarded as one of the largest official social organizations in terms of size and variety (Niazazari, & Amouei, 2007; Okunoye, & Karsten, 2002; Rajaepour & Rahimi, 2009). From the viewpoint of educational administrators, due to the lack of appropriate mechanisms for knowledge management implementation, this focus is merely an extra cost. Therefore, organizations should create the conditions for sharing, transferring, and comparing knowledge among their members and then attempt to build infrastructure and identify enabler mechanisms for implementing organizational learning processes and knowledge management in the organization (Tabarsa & Ormazdi, 2008).

Pham and Swierczek (2006) believe that organizational learning includes three processes of knowledge acquisition, knowledge sharing, and knowledge utilization. Dodgson (1993) defines organizational learning as "the ways firms build, supplement, and organize knowledge and routines around their activities and within their cultures and adapt and develop organizational efficiency by improving the use of broad skills of their workforces" (p. 37). Therefore, it can be claimed that organizational knowledge tries to create new organizational knowledge to improve

organizational processes, so that managers can be helpful in improving individual, collective, and organizational abilities (Seyed Kalan, Maleki Avarsin, & Suri, 2012).

Reviewing the effective factors in the development of developed countries reveals that these countries have powerful, efficient, and effective education systems (Abbaszadegan & Torkzadeh, 2009). It is obvious that in order to promote performance, teachers must develop competence, knowledge, skills, and information. In educational system, “professional teacher development ability is based on the concept that is understood as a process of inspiring and range of targets set by administrators aimed at changing professional development activities that the teachers used in different environments and conditions that lead to permanent review and change” (Jovanova-Mitkovska, 2010, p. 2922). According to Kimberly (2009), professional teacher development ability includes being knowledgeable, having development ability to manage classrooms, having the ability to communicate with students, identifying the expectations of students and creating interaction with students’ parents. UNESCO (as cited in Morales Lopez, 2011) has introduced the characteristics of a professional teacher, including development ability to teach students lesson planning, assessment, educational management and ability to use Information and Communication Technology (ICT).

Investigating the literature on organizational learning reflects the large number of ideas and viewpoints. The definition of organizational learning includes the process of detecting errors and correcting them (Argyris & Schon, 1978), the process of improving the operation through knowledge and information, learning how to learn, changing processes and structures according to individuals, and developing and facilitating learning at various levels (Neefe, 2001). According to Argyris and Schon (1978), there are three types of organizational learning: Single-loop or adaptive learning that occurs when errors are detected and corrected and firms carry on with their present policies and goals. Double-loop, strategic or generative learning occurs when, in addition to detection and correction of errors, the organization is involved in the questioning and modifying of existing norms, procedures, policies and objectives. Finally, deuteron-learning occurs when organizations learn how to carry out single-loop and double-loop learning.

Shrivastava (1983) summarized four views of organizational learning, namely adaptive learning, assumption sharing, development of knowledge and institutional experience. According to Mumford (1997), there are ten behaviors in the formation of organizational learning including asking questions, offering suggestions, discovering alternatives, risking and testing, being open and proactive, changing mistakes into learning, evaluating and review, talking about learning, accepting responsibility of self-learning and its development and allowing the occurrence of mistakes and shortcoming. In this regard, there have been many attempts at institutionalization and establishing appropriate mechanisms for organizational learning in educational institutions. The most important attempt has been made by Senge (1990) who identified five principles for effective organizational learning such as personal mastery, mental models, shared vision, team learning, and systems thinking (the most important principle). It should be highlighted that being learning organization in practice results in organizational learning. Choo (1996) believes that learning organization is the knowing organization. Watkins and Marsick (1993) identified seven dimensions of learning found in learning organizations, including creating continuous learning opportunities,

promoting inquiry and dialogue, encouraging collaboration and team learning, empowering toward collective vision, establishing systems to capture and share learning, connecting the organization to its environment, and providing strategic leadership to support learning. According to Pedler, Burgoyne, and Boydell (1991), there are eleven characteristics for learning organizations, namely a learning approach to strategy, participative policy making, informing, formative accounting and control, internal exchange, reward flexibility, enabling structures, boundary workers as environmental scanners, inter-company learning, a learning climate, and self-development opportunities for all.

According to Higher Education Quality Commission of England (2003), attempting to institutionalize the culture of organizational learning in institutions results in success. It considers organizational learning as an appropriate strategy through which learning as a conscious process changes into a sub-conscious process and causes an inherent competence in employees of these institutions. In their research, Nejadirani, Seyedabbaszadeh, & Asghari (2011) investigated the characteristics of learning organizations and their relationship with the creativity of employees in government organizations of West Azerbaijan Province and concluded that there is a positive and significant relationship between all the components of learning organizations and employees' creativity. In another research, Mirzaie Daryani, Sattari, and Shareghi (2012) designed a model for creating a learning organization according to the model of Armstrong and Foley (2003). The results indicated that the mechanisms of learning environment, identifying learning and development needs, and providing learning and development needs are above average, but the mechanism of applying learning to workplace is below the evaluated average.

Abolghasemi, Rashid Haji Khajelou, and Ahmadi (2011) indicated that organizational enabler mechanisms, information technology, and organizational culture have a positive and significant relationship with knowledge management processes. In other words, these mechanisms can establish and share knowledge positively. In another research conducted by Lee and Choi (2003), the components of centralization (sub-category of organizational structure enabler), collaboration, learning, and trust (sub-categories of organizational culture enabler) have a significant relationship with knowledge creation and knowledge sharing processes. Pourserajian, Olia, and Soltani Aliabadi (2013), in their research, showed that human resources, organizational culture, structure, system, technology, and strategies of leadership are effective leading factors in the process of knowledge sharing among organizations. Jimenez-Jimenez and Sanz-Valle (2011) found that organizational learning and innovation have a positive impact on firm performance and it is considered the main need of the organization. Similarly, Salim and Sulaiman (2011) found that organizational learning contributes to innovation capability and the innovation is positively related to firm performance. Garcia-Morales et al. (2006), in a research on strategic factors and barriers for promoting organizational learning in universities, stated that organizational learning has a positive impact on performance improvement and behavior change of organization's members. In their research, Perez Lopez, Manuel Montes Peon, and Jose Vazquez Ordas (2005) considered organizational learning as a determining factor in organizational performance.

Research Questions

This study will therefore address the *following research questions*:

1. Is there a relationship between organizational learning mechanisms in schools and teachers' knowledge sharing behavior and professional development ability?
2. How is the state of organizational learning mechanisms in the first three years of high schools in Ardabil County?
3. How is the share of each organizational learning mechanism in predicting teachers' knowledge sharing behavior?
4. How is the share of each organizational learning mechanism in predicting teachers' professional development ability?

Research Hypotheses

The following research hypotheses guided the current study:

H₁: There is a relationship between organizational learning mechanisms and knowledge sharing behavior of teachers of first three years of high schools in Ardabil County.

H₂: There is a relationship between organizational learning mechanisms and professional development ability of teachers of first three years of high schools in Ardabil County.

The Study

The conceptual model of this research is based on theoretical studies by Armstrong and Foley (2003), knowledge sharing behavior and professional development ability by Ackfeldt and Coote (2005). According to the theoretical foundations and the literature of the study, the study followed this conceptual model:

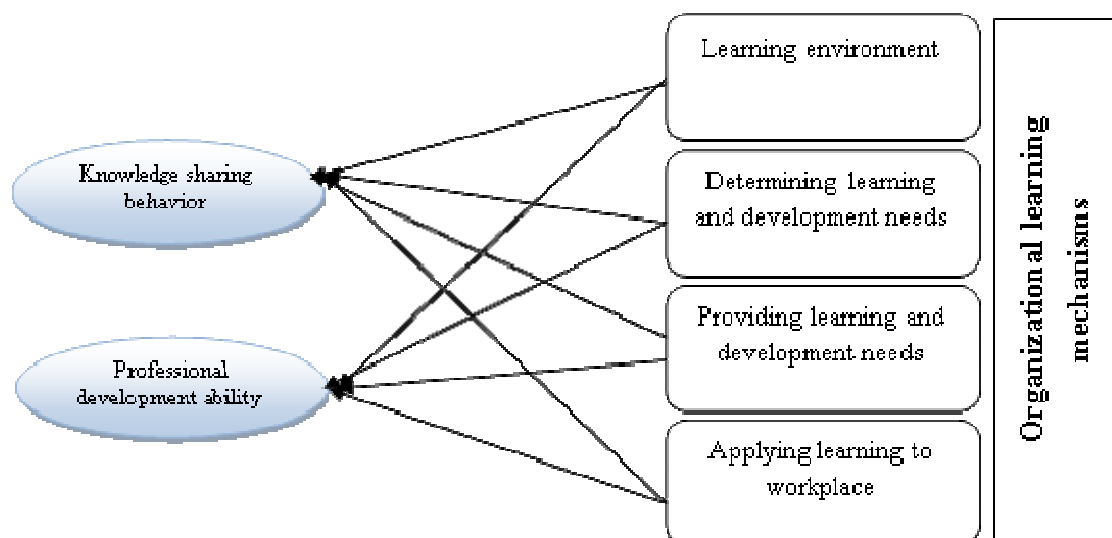


Figure 1. The Conceptual model

Method

This research is an applied research adopting a descriptive-correlational method. Nine hundred teachers of first three years of high school in Ardabil (Area 1 and 2) participated in this study. From this pool, 250 teachers were selected through Cochran's formula and simple random sampling. In order to gather the data, three kinds of questionnaires were used, i.e. standard questionnaires of organizational learning mechanisms by Armstrong and Foley (2003), knowledge sharing behavior, and professional development ability by Ackfeldt & Coote (2005). Face validity and content validity of questionnaires were measured by experts and professors and the reliability of the questionnaires were measured by Cronbach's Alpha. The Alpha for the questionnaire of organizational learning mechanisms is equal to 0.793 and for the components of learning environment, determining learning and development needs, providing learning and development needs, and applying learning to workplace are 0.759, 0.686, 0.763, and 0.789, respectively. The alpha for knowledge sharing questionnaire is equal to 0.863 and for the components of attitude towards knowledge sharing, normative beliefs in knowledge sharing, control beliefs, tendency towards knowledge sharing and knowledge sharing behavior are 0.781, 0.754, 0.761, 0.798, and 0.661, respectively. Finally, the alpha for the questionnaire of teachers' professional development ability is 0.711. The data was analyzed by using descriptive and referential statistics. At descriptive level, statistical characteristics such as frequency, mean and standard deviation have been used and at referential level, Kolmogorov-Smirnov Test, one sample t test, Pearson Correlation Coefficient and multiple stepwise regression through SPSS software have been used.

Results

Table 1 presents the means and standard deviations for the organizational learning mechanisms in schools, knowledge sharing behavior, and professional development ability among the teachers

Table 1

Descriptive Statistics for the Organizational Learning Mechanisms in Schools, Knowledge Sharing Behavior, and Professional Development Ability among the Teachers

Variables	M	SD
Organizational Learning Mechanisms	3.23	0.32
Learning Environment	3.48	0.61
Determining Learning and Development Needs	3.12	0.59
Providing Learning and Development Needs	3.15	0.51
Knowledge Sharing Behavior (Total)	3.34	0.36
Attitude towards Knowledge Sharing	3.42	0.69
Normative Beliefs in Knowledge Sharing	3.18	0.72
Control Beliefs	3.15	0.52
Knowledge Sharing Behavior	3.66	0.77
Professional Development Ability	3.66	0.74

Table 2 presents the regression coefficient between organizational learning mechanisms and knowledge sharing behavior and professional development ability.

Table 2

Regression Coefficient between Organizational Learning Mechanisms and Knowledge Sharing Behavior and Professional Development Ability

Predictor Variable	Knowledge Sharing Behavior		Professional Development Ability	
	r	p	r	p
Organizational Learning Mechanisms (Total)	0.65	.001**	0.43	0.01**
Learning Environment	0.18	0.18	0.24	0.01**
Determining Learning and Development Needs	0.42	.001**	0.35	0.01**
Providing Learning and Development Needs	0.50	.001**	0.18	0.01**
Applying Learning to Workplace	0.43	.001**	0.20	0.01**

** Correlation is significant at 0.01 level (2-tailed).

According to Table 2, the results of Pearson Correlation Coefficient indicates that there is a positive and strong correlation between organizational learning mechanisms and knowledge sharing behavior of teachers, $r = 0.65$. Furthermore, there is a positive correlation between all the organizational learning mechanisms and knowledge sharing with the highest correlation between learning and development needs, $r = 0.50$, $p < 0.01$, and the lowest correlation between learning environment, $r = 0.18$.

The relationship between organizational learning mechanisms and teachers' professional development ability was investigated using Pearson Correlation Coefficient. The analyses indicate that there is a positive and fairly strong correlation between organizational learning mechanisms and teachers' professional development ability, $r = 0.43$, $p < 0.01$. Furthermore, the positive correlation between the components of learning environment, determining learning and development needs, providing learning and development needs, and applying learning to work place and the teachers' professional development ability was confirmed, $p < 0.01$.

Table 3 indicates the results of one sample t-test for the state of organizational learning mechanisms in the first three years of high schools.

Table 3

The Results of one Sample t-test for the State of Organizational Learning Mechanisms in the First Three Years of High Schools

Organizational Learning Mechanisms	M	SD	df	t	p
Learning Environment	3.48	0.61	23	12.27	0.01**
Determining Learning and Development Needs	3.12	0.59	23	3.25	0.01**
Providing Learning and Development Needs	3.15	0.51	23	4.61	0.01**
Applying Learning to Workplace	3.14	0.54	23	4.18	0.01**
Organizational Learning	3.22	0.32	23	10.76	0.01**

According to Table 3, the mean of organizational learning is above average (3.22) and among the components of organizational learning, learning environment has the highest mean (3.48) and determining learning and development needs has the lowest mean (3.12). The information above indicates that among the organizational learning mechanisms, teachers pay more attention to learning environment mechanism. Therefore, it can be concluded that among the organizational learning mechanisms in the first three years of high schools in Ardabil

County, paying attention to learning environment and its mechanisms is in a good condition. The mechanisms of determining and providing learning and development needs and also applying learning to workplace are at the next levels and attempting to improve them seems necessary.

Teachers' knowledge sharing behavior was investigated in terms of organizational learning. It was found that the components of determining learning and development needs, providing learning and development needs, and applying learning to workplace remained in the model with significance level set at $p < 0.01$, $R = 0.502, 0.641, 0.698$. There is a significant linear relationship between the predictor and criterion variables. In fact, the mechanisms of providing learning and development needs ($\beta = 0.36$), determining learning and developing needs ($\beta = 0.408$), and applying learning to workplace have the greatest share in estimating teachers' knowledge sharing behavior, respectively.

Teachers' professional development ability was examined in terms of organizational learning mechanisms. It was found that the components of determining learning and development needs, applying learning to workplace, and learning environment remained in the model with significance level set at $p < 0.01$, $R = 0.35, 0.41, 0.44$. There is a significant linear relationship between the predictor and criterion variables. The mechanism of determining learning and developing needs ($\beta = 0.32$) has the greatest share and the mechanisms of applying learning to workplace ($\beta = 0.20$) and learning environment ($\beta = 0.18$) have the lowest share in estimating professional development ability.

Table 4 and Table 5 show the summary of multiple regression model.

Table 4

The Summary of Multiple Regression Model

Model	Variables	R	R ²	F	B	SE	β	T	P
1	Providing Learning and development Needs	0.50	0.25	80.03	0.25	0.03	0.36	7.27	0.000
2	Determining Learning and Development Needs	0.64	0.41	82.64	0.24	0.02	0.40	8.73	0.000
3	Applying Learning to Workplace	0.69	0.48	74.75	0.20	0.03	0.29	5.92	0.000

Criterion Variable: Knowledge Sharing Behavior

Table 5

The Summary of Multiple Regression Model

Model	Variables	R	R ²	F	B	SE	β	T	P
1	Determining Learning and development Needs	0.35	0.12	34.20	0.40	0.07	0.32	5.45	0.000
2	Applying Learning to Workplace	0.41	0.16	24.15	0.27	0.08	0.20	3.44	0.001
3	Learning Environment	0.44	0.20	19.75	0.22	0.07	0.18	3.04	0.003

Criterion Variable: Professional Development Ability

Discussion and Conclusion

The aim of present study was to investigate the evaluation and role of organizational learning mechanisms in teachers' knowledge sharing behavior and professional development ability in the first three years of high schools in Ardabil County. According to the results, organizational learning mechanisms in these schools are in a good condition and knowledge sharing behavior and professional development ability in teachers of these schools are above average. The analyses of research hypotheses indicated that there is a positive and significant relationship between organizational learning mechanisms and knowledge sharing behavior and professional

development ability. In other words, organizational learning mechanisms are appropriate predictors of knowledge sharing behavior and professional development ability of teachers.

Given the first question of the study, the organizational learning mechanisms are in a good condition in those schools with the highest mean of mechanism of learning environment and the lowest mean of determining learning and development needs. The results obtained are in line with the results of research conducted by Mirzaie Daryani et al. (2012). According to Armstrong and Foley (2003), organizational learning mechanisms, which provide the development and establishment of learning organization, can be effective in improving employees' efficiency and ability. In fact, these mechanisms are considered as sort of competence for today's organizations. Organizational learning mechanisms, which include cultural and structural aspects of the organization, can also facilitate the development, improvement, and modernization of learning organization.

According to the first hypothesis of the research, there was a relationship between organizational learning mechanisms and knowledge sharing behavior of teachers of first three years of high schools in Ardabil County. The results revealed that there was a positive and significant relationship between organizational learning mechanisms and knowledge sharing behavior of teachers. These results are in line with the results of research conducted by Kimberly (2009) and Pourserajian et al. (2013). In fact, organizational learning mechanisms and technical infrastructures that support learning are the most important factors in knowledge sharing and knowledge application which have considered an organizational empowerment culture in representing and producing knowledge (Lee & Choi, 2003). Sharing and managing knowledge are turned out as the main part of learning organizations which can take place in organizations voluntarily or involuntarily. Therefore, organizations should create the conditions for sharing, transferring and comparing knowledge among their members and attempt to identify enabler mechanisms for implementing organizational learning processes and knowledge management in the organization (Tabarsa & Ormazdi, 2008). From the viewpoint of educational administrators, due to the lack of appropriate mechanisms for knowledge management implementation, this sort of investment is merely an extra cost. Therefore, developing a comprehensive culture within school factors seems necessary.

The second hypothesis of the research about the relationship between organizational learning mechanisms and professional development ability of teachers of first three years of high schools in Ardabil County indicated that there is a positive and significant relationship between organizational learning mechanisms and professional development ability of teachers. These results are consistent with the results of research conducted by Salim and Sulaiman (2011), Garcia-Morales et al. (2006), Jimenez-Jimenez and Sanz-Valle (2011), and Perez Lopez et al. (2005). It is obvious that performance enhancement in organizations is derived from competence, knowledge, skills, and information. In educational system, professional teacher development ability means changing professional development activities that the teachers use in different environments and conditions to enhance performance (Jovanova-Mitkovska, 2010). Learning mechanism in educational organizations can be effective in improving teachers' professional development ability. Professional teacher development ability includes possessing development ability to manage classrooms and the ability to communicate with students, identifying the expectations of students and creating interaction with students'

parents. Consequently, it can be concluded that by determining need for learning, learning environment, and providing learning needs in schools, we can take major steps in teachers' professional development. This will also be reflected in applying learning to workplace.

According to multiple regressions, in predicting knowledge sharing behavior by means of organizational learning mechanisms, the mechanisms of determining, providing learning and development needs, and applying learning to workplace have the greatest share. More simply said, these mechanisms have major share in teachers' knowledge sharing behavior. These results are in line with the results of research conducted by Mirzaie Daryani et al. (2012). Principals can provide organizational learning mechanisms to increase knowledge sharing behavior, so that they can influence teachers and other staff and transform their school into a dynamic learning organization. In the other prediction of this research, it was found that the mechanism of determining learning and development needs had the greatest impact on estimating teachers' professional development ability and the learning environment mechanism had the lowest impact. These results are best supported by the results of research done by Garcia-Morales et al. (2006). Knowledge management is believed to be one of the most significant factors in employees' performance improvement, managers' success or failure, and organizations' competitive advantage during the third millennium. This is hard to achieve unless organizational learning mechanisms are properly implemented in organizations especially in schools because they are considered dynamic organizations.

A number of pedagogical recommendations can be offered from the findings of this study. Principals can lay the foundations for developing learning mechanisms in schools. The officers of Ministry of Education in Ardabil County can identify efficient principals who can implement organizational learning mechanisms. Since it was found that among organizational learning mechanisms, learning environment had a low correlation with teachers' knowledge sharing behavior and applying learning to workplace had a low correlation with their professional development ability, principals are recommended to take major steps in establishing infrastructure for learning environment and encouraging teachers to apply learning to workplace. These mechanisms are believed to be effective in improving teachers' knowledge sharing behavior and professional development ability.

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