THE STUDY OF RELATIONSHIP BETWEEN THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY AND MANAGEMENT OF ORGANIZATIONAL KNOWLEDGE

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Abstract

The present study aims to investigate the relationship between the use of information and communication technology and management of organizational knowledge of middle school administrators of Jafarabad. The purpose of the study is applied and the methodology used for data collection is descriptive-correlational. Research population, includes Managers, principals and teachers of schools in the Jafarabad. Data collected from the questionnaire used in this study. After the pre-test questionnaire and ensure high reliability, 160 questionnaires were distributed and collected from Jafarabad school on October 2013 and SPSS software is used in order to analysis the data .Pearson correlation test was used to test the hypothesis of the study. This study examines the relationship between information and communication technology and knowledge management. Results indicated that there was a significantly positive relationship between the degree of using information and communication technology and knowledge creation, knowledge transfer, and application of knowledge.

Keywords: Information and communication technology- Knowledge management, Middle school administrators

Introduction

The use of information technology is growing for knowledge management with regard to increasing development of its application in organizations. Technologies such as internet, e-mail, fax, database of organizations, and so forth have played a crucial role in knowledge management. On the other hand, capability of more access to advanced software, reduction in costs and establishment of computer equipment have functioned as support of information technology for knowledge management and this will enable considerable developments in intelligent behaviors and based on knowledge of organization and its people. Revolution of knowledge produced deep changes in domain of technology and science in order to provide a clear and comprehensive focus on slogan of knowledge of power. After agricultural revolution, in which earth was a key source, and industrial revolution, in which capital and workforce were the key sources of revolution, world observed an informational revolution, in which making investment and knowledge income are regarded as valuable sources. With the arrival of twenty-first century, rapid changes in technology and intensive complexity of organizations were made. Range of these changes and complexities have been begun from small organizations and have taken a global form. We need innovation, creativity, and exchange of knowledge in order to encounter this complexity and this is possible through application of update technologies and management of knowledge. On the one hand, rapid changes in technology of personal computers and electronic

communications in the last decade have enabled us to create, collect, manipulate, save, and transfer information. Today, it is a reality that transferring massive proportions of information is done by the internet and other communication devices daily.

Statement of the problem

Since information and communication technology (ICT) has been used as an updated knowledge in the development program of educational system organizations, educational system, as a scientific organization committing supply and education of skillful human resources of society, tries to play an effective and successful role in developing society through the optimal application of these technologies, modification and improvement of structures, and processes. In other words, suitable infrastructures of information and communication technologies and teachers' knowledge and awareness of these technologies facilitate transferring and providing knowledge (Hassani, 2010). In this study, it is hypothesized that the use of information technology in knowledge management is one of the important ways for access to knowledge creation, transfer, and apply. It means that each organization that cannot create knowledge it cannot organize and ultimately manage the utilization of the existing knowledge at the present time and future and, therefore, it cannot be expected that the organization achieved its goals because this organization or administrators of educational system not only are not able to use their knowledge but also they likely rework continuously and lose their energies and precision (Raten & Sousner, 2006). Knowledge of management is a method of identification, disposal, organization, and processing of information to create knowledge, after which is distributed, and then is accessible for others to be used for creating more knowledge (Egbo, 2004).

The most important causes of organization tendency to the subject of knowledge management are that management of knowledge:

1. Increases productivity and profitability,
2. Reinforces cooperation and grows creativity and innovation,
3. Facilitates the exchange of information among personnel, and
4. Enhances the power of organization to encounter the phenomenon of information inflation (Rahimi, 2007).

Knowledge management is a type of technology that emphasizes knowledge and intends to solve problems by effective use of knowledge.

Theoretical framework

The management of knowledge

Knowledge management is defined as promoting organizational conductivity in order to improve its abilities in attracting clients. Hence, a place, time and state must be existed in order to encourage reasonable actions and strategies influencing our behaviors (Aghaei, 2001). Information technology simply means the knowledge of using a range of instruments, including processing, maintenance, collection, reserve, distribution, transfer, and security that applies on information (Aghazade, 2007).

Concept of technology and its relationship with knowledge

The English equivalent of word is technology. This technology is a combination of technique meaning knowledge and logy meaning systematic and their combination that is technology means organized knowledge. In this way, the first manifestation of knowledge occurred in technology and the knowledge was removed from its personal aspect and turned into a dialogue state. Peak of this concept was gradually appeared in the form of information and communication and gained great power so that it is assumed that it can think as human being. Information technology can never replace with human knowledge because only humans are owners of knowledge and machines are merely a means of presentation and display of knowledge and are not superior with regard to reality and abstractness. Knowledge and management of knowledge are successors of information technology, and born of it; however, it immediately made a gap and questioned its validity and

respect to a technical instrument and accused it to inflexibility and stiffness and in turn it continued to continuous innovation and permanent thirst. Therefore, the knowledge passed informational community by virtue of its dynamic and innovative characteristics and knowledge community was replaced with it (Adli, 2005).

Virtual communities of information and communication technology

Informational communities, in Vanger et al.'s views, are a group of people who share in an affair, participate in a set of issues, in which they have a shared point, and deepen their knowledge and specialization in above-mentioned domains through continuous interactions (McDermortet, 1999).

Knowledge management in organizations

Todays, structure of the environment of knowledge, in where organizations must be active, has been influenced by the procedures of knowledge environment, including explosion of knowledge, specialization, globalization affaires of knowledge, etc. Knowledge management has been put forward as an attempt to adapt to environmental changes for the effect of these procedures. Dimata and Auder believe that the origin of knowledge management is two fundamental small shifts of minimization and technology development. In the 1980s, minimization, which was a suitable strategy for reduction in overhead costs and increase in profit, accessed significant knowledge because personnel took its repertoire that was reserved during years. With the time, organization found that they lost valuable information and experienced during those years. Thus, they decided to protect themselves from return of this trauma. This made management take the strategy of knowledge management in order to retain knowledgeable personnel for assuring the future of company (Gholizade & Asadi, p. 28).

Hierarchy of knowledge

Knowledge originates from science (metadata), science from information, information from data, and data from news. Knowledge, losing it value, is changed into science and then into information and data, and one reason for this is de-knowledge (Adli, 2005).
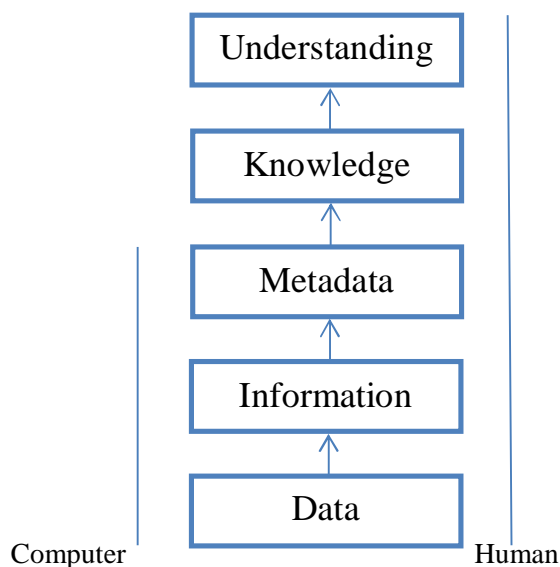

Figure1. Hierarchy of knowledge

The following cases should be noticed to succeed in the process of knowledge management:

1. **Connectivity:** technology itself is not enough to succeed in approach to knowledge management; however, it can be a major infrastructure for sharing knowledge and also an important activator. Access of all parts of an organization to architect of knowledge management, web-based programs, mobile devices, and data mining devices are support precursors of knowledge management infrastructure. Technology activates new behaviors of knowledge.
2. **Content:** firstly, organization must do knowledge audit to identify external and internal points influencing knowledge. External and internal forces influencing knowledge take different forms, including: knowledge of client or appearance of new media.
3. **Community:** successful knowledge management depends on a set of performances or group of people cooperating in organization. These individuals interact with each other in different stages, including preparation, provision, operation, setup, and achievement to final result.
4. **Culture:** main components of the culture of knowledge management are support and protection of chief manager and continuous attention to these components is of importance. In other words, you must be sure of information received from your colleague and information received by your colleague from you, considering his confidence in your work, will be valuable and in the case of continuing this procedure, it will be accompanied by a successful knowledge management.
5. **Cooperation:** work flows are heavily dependent to each other in knowledge organizations. This cooperation is the secret of a successful knowledge management because it can remove hurdles such as differences in cultures and leads people of organization to achieve their goals.
6. **Investment:** investment in knowledge management is an important factor for accelerating utilization of innovations and increasing knowledge of people in organization.

Thus, it can be said that systematic understanding and attention to above-mentioned points help organizations do knowledge audit and implement an effective knowledge management strategy successfully (Abbasi, 1387).

Review of literature

Abbasi (1387) conducted a study on the relationship between events of knowledge management and level of innovation in organizations. Results indicated that there was a relationship between triple procedures of knowledge management (including, knowledge acquisition, knowledge distribution and response to knowledge). It was also found that there was a relationship between procedures of knowledge management and innovation

Shahbazi (2006) investigated the relationship of knowledge management with innovation of information and communication technology and their roles in improvement of efficiency of processes. Shahbazi found that making commitment between management levels and personnel to organizational insight reinforces its efficiency and facilitation of group work as one of the major grounds of innovation.

Rahimi (2007) examined the relationship between components of organizational knowledge management and degree of creativity of Esfahan University faculty members. She indicated that there was a significantly positive correlation between dimensions of knowledge management and degree of creativity. There was not a significant difference between average knowledge management of faculty members according to their age, field of study, and gender and between degree of creativity of faculty members according to their age, filed of study, and employment status.

Hassani (2010) studied the relationship between degree of knowledge of information and communication technology and enablement and creativity of personnel in education office of Azerbayjan and found that there was a significantly positive relationship between information and communication technology and and enablement and creativity of personnel.

Egbou (2004) mentions that knowledge management and intellectual capital are key factors of success of innovations in organizations and an effective knowledge management of knowledge assets is a holistic approach. Therefore, educational programs must reflect innovation reality and dimensions of knowledge management as highly complex social processes.

Mourphey and Pouline (2007) revealed that there was a difference and conflict in management of creative employees and operation of traditional management in many parts of organization. In addition, management of conflicts requires special knowledge and skills, confidence of external people, and acceptance of ambiguity in action thought.

Raten and Sousner (2006) concluded that knowledge have a significance by a process of shared learning and each knowledge specific to organization and special knowledge of market is based on two major types of shared learning called two-way mutual learning and one-way learning.

Research Methodology

The study from purpose view is applied, and from method view is analytical and correlation. The study recruited by school Managers Jafarabad on the 2012-2013 academic year, including 28 cases against each principal director of school 3 to 5 people at random of direct assistance to them (including principals and teachers in schools where 306) participated in this study had a total of 334 people have set up and 160 the questionnaires were distributed and the same amount was also analyzed. A questionnaire was used to collect the intended data. Validity of the questionnaire was confirmed by some professors and the reliabilities of the information and communication technology and of knowledge management were estimated respectively 70% and 0/75. SPSS software was used for data analysis. Pearson correlation test was used and evaluated to measure and determine the relationship between demographic characteristic of participants and studied dimensions.

Data analysis

Main hypothesis

There is a significant relationship between the use of information and communication technology and knowledge management of administrators of middle schools of Bile Savar.

Secondary hypothesis

- There is a significant relationship between the use of information and communication technology and knowledge creation.
- There is a significant relationship between the degree the power of information and communication technology and knowledge transfer.
- There is a significant relationship between the degree of knowledge of information and communication technology and knowledge application.

Analytical results and findings

1. Relationship between the using information and communication technology and knowledge creation.

Table (1) the results of the Pearson correlation coefficient for variable knowledge creation.

	P-Value	Pearson Correlation
Relationship between the using and knowledge creation.	0.001	0/98

Correlation between the use of information and communication technology and knowledge creation was significant at .05% level of significance. Therefore, the null hypothesis of no relationship between the use of information and communication technology and knowledge creation is rejected and their relationship (+.98%) is accepted.

2. There is a significant relationship between the degree the power of information and communication technology and knowledge transfer.

Table (2) the results of the Pearson correlation coefficient for variable knowledge transfer

	P-Value	Pearson Correlation
Relationship between the degree the power and knowledge production	0.003	0.94

Correlation the degree the power of information and communication technology and knowledge transfer was significant at .05% level of significance. Therefore, the null hypothesis of no relationship between the use of information and communication technology and knowledge transfer is rejected and their relationship (+.94%) is accepted.

3. Relationship between the degree of knowledge of information and communication technology and knowledge application.

Correlation between the degree of knowledge of information and communication technology and knowledge application was significant at .05% level of significance. Therefore, the null hypothesis of no relationship between the use of information and communication technology and knowledge application is rejected and their relationship (+.99%) is accepted

Table (3) the results of the Pearson correlation coefficient for variable knowledge application

	P-Value	Pearson Correlation
Relationship between the degree of using and knowledge application	0.001	0.99

Table (4) Correlation between creation, transfer, application and using

		creation	transfer	application
using	1	0.98^{*} 0.001		
		1	0.94^{*} 0.003	
			1	0.99^{**} 0.001
				1

Conclusions and Recommendations

H1: There is a significant relationship between the use of information and communication technology and knowledge creation.

The findings indicated that there was a significant relationship between the use of information and communication technology and knowledge creation. This relationship showed that the more the degree of using IT by administrators, the more effective the degree of knowledge creation of administrators will be. Therefore, it can be concluded that the use and awareness of administrators of these technologies capabilities and their ability in applying these technologies have a crucial role in success of educational system related knowledge management. Thus, education system should help administrators in producing knowledge by more investment in providing necessary conditions and facilities in schools, including internet, e-mail, and management of files and documents for developing activities related to knowledge management and compilation and presentation of necessary trainings for school administrators in the field of information and communication technology. Application of information and communication technology by administrators and teachers is necessary in today world, in which introduced rapid changes have been challenged organizations differently. Those schools are successful, whose administrators assist their students achieve their objectives by updated information and application of modern knowledge management. Those administrators are successful who enjoy created opportunities by using managerial instruments and modern technologies. Knowledge management is one of these instruments; however, it is information technology that facilitates the process of knowledge management and helps it achieve its goals and has a supporting role.

H2: There is a significant relationship between the degree the power of information and communication technology and knowledge transfer

The findings indicated that there is a significant relationship between the degree the power of information and communication technology and knowledge transfer. This relationship shows that today, knowledge transfer is intellectual capital of administrators and one of the valuable assets of each organization. Successful administrators will be those who are continuously aware of the value of intellectual capital and enjoy it. Administrators who have programmed and transferred necessary infrastructures for implementation and use of information and communication technology in order to transfer their knowledge and work experience to other people and data in educational system will not encounter difficulty in achieving success. Moreover, educational system must play a significant role in knowledge transfer by creating database related to each specialization or administrators' responsibility. However, education system must have a comprehensive program for knowledge management and attends to all organizational factors influencing successful knowledge management.

H3: There is a significant relationship between the degree of knowledge of information and communication technology and knowledge application.

Findings of the study indicated that there was a significant relationship between the use of information and communication technology and knowledge application. This relationship reveals that considering rapidity of changes and complexity of business environment in today society, knowledge application is a key source and is also regarded as vital property of administrators for achieving success. Education system requires using administrators' knowledge and is susceptible to implementation of programs related to knowledge management. A successful knowledge management is possible through clear understanding of administrators of information cycle, four key parts of knowledge management, and differentiation between management of data and management of information. It is school administrators who must have a comprehensive program for knowledge application when encountered difficulties in education system in order to identify and resolve the problems in achieving their objectives.

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