Contents lists available at Science-Gate

International Journal of Advanced and Applied Sciences

Journal homepage: http://www.science-gate.com/IJAAS.html

A survey of the relationship between knowledge storage and web-based learning in students

Abass Ali Jamshidi *

Department of Educational Sciences, Payame Noor University (PNU), Dolatabad, Isfahan, Iran

ARTICLE INFO

Article history:
Received 21 November 2015
Received in revised form
12 January 2016
Accepted 14 January 2016

Keywords:
Web
Education
Knowledge storage

ABSTRACT

The present study aimed to evaluate the relationship between web-based learning and attitude of post-graduate students of Isfahan University to knowledge storage component. The present study is descriptive-correlation in terms of method. The required data is collected by standard questionnaire. The study population is post graduate students of Isfahan University. The sample size is 2331. The study method is stratified random sampling method. To evaluate validity of questionnaire of web-based learning, content validity is applied. To evaluate reliability, Cronbach's alpha is used. Cronbach's alpha is computed by SPSS software. The reliability of this questionnaire is good. The data analysis is performed by SPSS software. The web-based training has significant association with attitude of post-graduate students to knowledge storage component.

1. Introduction

Taking model and evaluation of experiences of private organizations can help the universities in implementation of knowledge management process. State organizations not formulating special strategy for knowledge management by evaluation of private organizations and their success and failures in implementation of knowledge management process can take model of them and can have effective management on organizational knowledge. Creating a culture is promoting knowledge sharing in organization, giving value to it and rewarding it. Some required mechanisms should be created for knowledge sharing by management as the staffs can consider it useful for their job and improve their ability in doing works (Omidvaran, 2006). Some theorists apply process concept for operationalizing knowledge management. From their view, knowledge management process exists continuously in organization and temporary presence is not meaningful. Its result is clarified in its continuous presence as the main principle in organizations. Thus, knowledge management process consists of production or identification and knowledge acquisition, storage and documentation of knowledge, dissemination and distribution of knowledge and knowledge application. Based on various dimensions of knowledge management, Jashapara defines knowledge management in the form of a four pillar as: Effective learning processes with creating, organizing, knowledge exchange (explicit and tacit) with the appropriate use of technology and cultural environment as leading to improvement of organizational rational capital and improvement of its performance (Jashapara, 2004).

Knowledge creation: This leads to learning ability and communication. The development of this capability, experience of knowledge sharing, communication between ideas and crossed relationship with other issues are of great importance.

Soo et al. (2002) proposed a five-aspect example for knowledge creation process:

1- Information and knowledge acquisition from interaction networks
2- External and internal knowledge integration
3- Creating new knowledge among information application and knowledge for problem solving
4- Effect of new knowledge on innovation and performance of company
5- The individual and organizational factors role in the entire process.

Via knowledge management, managers attempt to extract the mind knowledge of organization members and share it among all people. Thus, the stored knowledge in system is turned into a permanent use source and provides sustainable competitive advantage of organization. Web-based learning systems or Virtual Learning Environments (VLE) are web-based communication platforms allowing the students to have access to various learning tools including Course content , help of teachers, Discussion boards, Document sharing systems and learning resources. Thus, students all

* Corresponding Author.
Email Address: malekpour.ins@gmail.com

over the world can have access to learning tools including Chat rooms, discussion boards of content management of course. Most of high education institutions apply these web-based learning systems for electronic learning courses. Internet is a source to develop training and responding the people needs. The considerable issue in this regard is as those involving with web-based learning design are encountered with some questions as what is web-based learning or to which types, it is divided. Using various technologies for learning process management is called web-based learning (Khamushi, 2012).

2. Review of literature

Amanzade and Noan (2014) in the study "The effect of training based on new educational technologies on life skills of students of Universities of Mazandaran province" applied a questionnaire on 50 people as students in experiment and control group. The results showed that training based on new educational technologies (web-based training, computer, mobile learning) had significant effect on life skills (decision making, problem solving, critical thinking, creative thinking).

Rajayi Azarkhani et al. (2014) conducted a study "The relationship between knowledge sharing and improvement of scientific quality from the view of faculty members in selected Universities of Isfahan" as descriptive-correlation. The study population is all full-time faculty members of Isfahan University (593), Medical sciences of Isfahan (643) and Islamic Azad University of Khorasegan (236) as totally 1472 people. By random stratified sampling method, 177 people are selected. The results showed that there was a positive and significant association between knowledge sharing and improvement of scientific quality. Also, there was a positive and significant association between knowledge sharing components and all components of scientific quality improvement components.

Kordi et al. (2013) in the study "comparison of the effect of web-based training, simulation and durability of knowledge and skill of hemorrhage after delivery in midwifery students of nursing and midwifery school in Mashhad" in a clinical test on 54 students of nursing and midwifery found that knowledge durability of hemorrhage after delivery in midwifery students was increased significantly after one week and one month after training. The durability of skill of hemorrhage control after delivery in web-based training was more than that of the group based on simulation. Thus, we can use web-based training as an available method.

Poursoltani and Iraji (2013) in the study "The relationship between knowledge management and creativity of employees of main office of physical education of Ferdoosi University of Mashhad" as field study on 50 people including all employees of main office of physical education of Ferdoosi University of Mashhad was conducted. It was found that there was a positive and significant association between knowledge management and creativity of employees. The sport organization authorities should eliminate the barriers and provide the establishment of knowledge management in organizations.

Gholami et al. (2013) in the study "governance of knowledge management factors in libraries of Medical Sciences University of Isfahan" as a survey study on all librarians working in libraries of Medical Sciences University of Isfahan (82), the results showed that using knowledge management components in libraries of Medical Sciences University of Isfahan is not scientific due to the lack of instructions, policies and authorities support. Thus, management and leadership in libraries should be as knowledge management factors are accepted among all employees.

Ardakani et al. (2013) conducted a study "The analysis of condition of knowledge management dimensions in higher education institutions and the evaluation of its relationship with innovation" as descriptive-correlation. The study population is faculty members of Yazd University. The results showed that there was a significant association between all infrastructural dimensions (technology, structure, culture) and knowledge management process (Knowledge creation, knowledge storage, etc.).

Namvar et al. (2011) in the study "The impact of web-based learning with problem solving approach on logical thinking growth of English language students of Islamic Azad University in Ardebil" on 15 students, conducted a pre-test and post-test of experiment and control group as 15 for logical thinking. They found that the evaluation of the effect of web-based learning had significant association with problem solving on the growth of logical thinking of English students of Islamic Azad University of Ardebil branch as web-based learning was effective on growth of logical thinking of students.

Amanlou (2011) in the study "Using web-based educational environment in teaching Mycology for pharmacology students of Medical Sciences University of Zabol conducted a descriptive-comparative study for pharmacology students in the first half year 2009-2010. The results showed that despite the interest of students in web-based education, the comparison of total average of experiment and control groups showed some evidences on failure of electronic method. Thus, it is required to review different aspects of e-learning including computer knowledge, telecommunication infrastructures, culture of using internet, leisure aspects of internet, textbook content and etc.

Ghahreman et al. (2011) in the study "Study of condition of infrastructures of knowledge management in Tabriz University from the view of Faculty members" as survey method applied questionnaire. The study population is all faculty members of Tabriz University as 169 people are selected by stratified sampling method. The results showed that the familiarity of study population with

the concept of knowledge management is low and we should attempt to improve the condition.

Keyvanara et al. (2011) conducted the study "The relationship between knowledge management and organizational intelligence components in colleges of Medical Sciences University of Isfahan" by descriptive-correlation method. The study population is all staffs of colleges of Medical Sciences University of Isfahan (380) as sampling size is 130. The results showed that the knowledge management components and organizational intelligence were less than average and there was a significant correlation between scores of knowledge management and organizational intelligence components. Thus, using update knowledge, distribution and knowledge sharing and awareness of environmental factors and survival created organizational intelligence in University.

Keyvanara et al. (2011) in the study "The relationship between knowledge management and organizational intelligence components in colleges of Medical Sciences University of Isfahan" as descriptive was conducted on staffs working in 7 staff deputy of University with associate degree and above and faculty members (1266) and sample size is 295. The results showed that in Medical Sciences University of Isfahan in six process of knowledge management (identification, acquisition, distribution, storage and keeping knowledge) all fields are less than average.

3. Methodology

The study method is descriptive-correlation. In this study, the required data is collected by field study and two standard questionnaires are used. The questions of these questionnaires are five-item Likert scale. These questionnaires were distributed among post graduate students and all colleges of Isfahan University and it included all fields, one by one of colleges were involved and MA and PhD students were selected randomly.

3.1. Study population

In this study, post-graduate students of Isfahan University are selected as study population. The sample size is 2334; there are 506 PhD students and 1828 MA students.

3.2. Sampling method and sample size estimation

The sample is a part of population indicating it. For sampling, we should have a complete list of people in society. This list is called sampling framework. In this study, as total population is not homogenous and it is based on attributes to some classes, the best sampling plan is random stratified sampling method.

3.3. The measures of validity and reliability

In this study, no researcher-built questionnaire is used. The standard questionnaires as evaluated before by researchers are used. To evaluate validity of questionnaires, content validity is used. In this type of validity, the sample of questions in a test can show the total population of questions. The better the test from this regard, the higher the validity. The test with reliability, it is given to unit groups at short time and the results are close to each other. Reliability is the required condition for validity. To do this, an initial study is performed by distributing 30 questionnaires among students. Based on the variance of each of questions and total variance of test, Cronbach's alpha coefficient is evaluated well by SPSS 20 software.

3.4. Study variables

The study variables are the factors common among people in society and can have different quantitative value. There are various variables and are classified based on different basics. The variables are divided based on the relationship between three groups of predictive, criterion and moderating variables. The predictive variables are those accepting some values after selection, manipulation by researcher to observe its effect on criterion variable (Khaki, 2008).

3.5. Analysis measure

After collection of data of questionnaires and dedicating score to scales, to quantify the data (very much=5, much=4, average =3, low=2, very low=1), the entire data in questionnaires based on different variables entered SPSS software. Then descriptive statistics are used for description, classification, frequency, percent, mean, standard deviation, tables and charts. In this study, quantitative methods of analysis are used as: regression analysis and Pearson correlation test. For data analysis and extraction of results of study, SPSS 20 software is applied.

4. Results

By regression test, this hypothesis is tested. The results are shown in Table 1. The significance level of F test is less than 0.05. Thus, this hypothesis is supported and we can say web-based learning is associated with attitude of post-graduate students compared to knowledge storage component.

Adjusted coefficient of determination is 0.39. Thus, 39% of changes of knowledge storage are explained by web-based learning. In this model, based on table, Durbin-Watson statistics is 1.978 and this value is ranging critical value 1.5-2.5. Thus, errors are independent. Based on histogram of error distribution as normal, the residual mean is about zero and standard deviation is about one. In the distribution chart, there is no dispersion and points are dispersed randomly. Thus, residuals variance equality is established. Three regression

assumptions are established and there is no problem in using regression (Figs. 1 and 2).

Table 1: Results of regression of web-based learning on knowledge storage component

Model	Raw coefficients		Standard coefficients	T	Significance level	Adjusted coefficient	F	Significance level	Durbin-Watson statistics
	B	Standard error	Beta						
Constant	1.980	0.327	–	6.061	0.000				
Knowledge storage	0.296	0.098	0.210	3.024	0.003	0.39	9.144	0.003	1.978

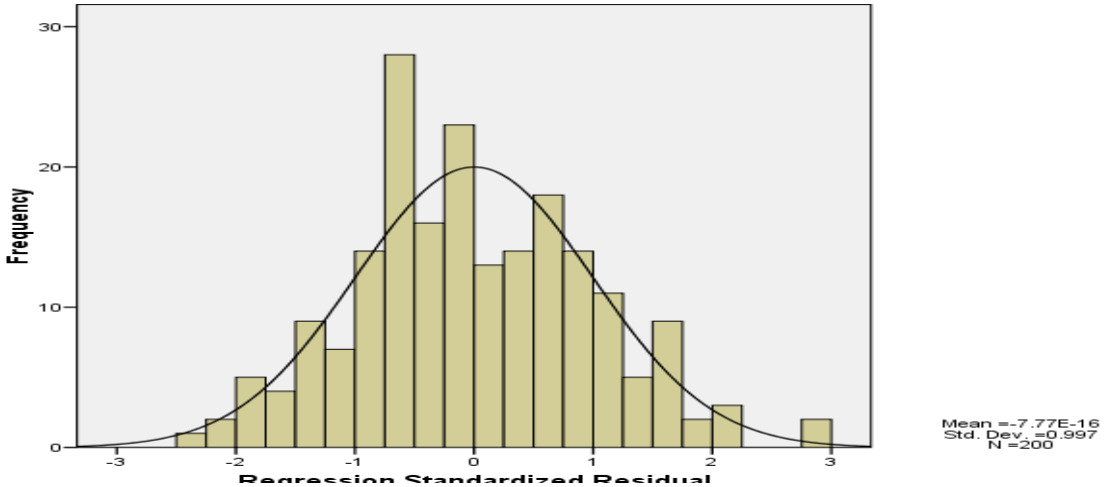

Fig. 1: Histogram chart of residuals of web-based learning regression model on knowledge storage component

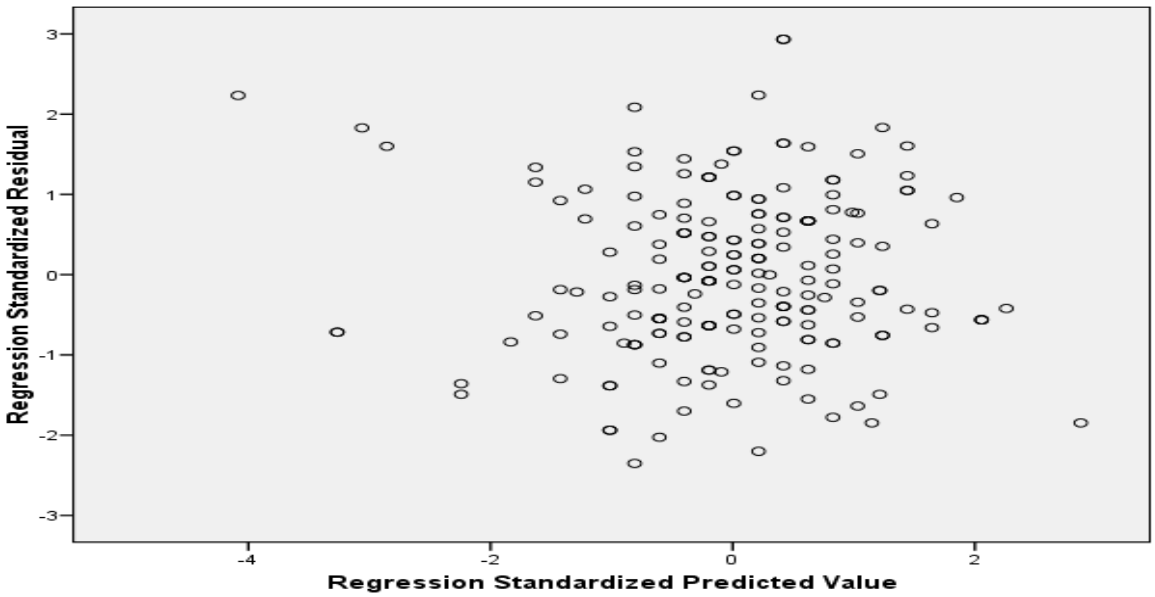

Fig. 2: The chart of prediction values to the residuals of web-based learning regression on knowledge storage component

The result of comparison of present study is consistent with the past local studies such as Amanzade and Noan (2014); RajayiAzarkhani et al. (2014); Kordi et al. (2013); Porsoltani and Iraji (2013); Ardakani et al. (2013); Namvar et al. (2011); Keivanara et al. (2011) and are inconsistent with the study of Amanlou (2011).

The result of comparison of present study with the past foreign studies: The present study is consistent with the foreign studies of Kanjug (2012), Qing (2011), Karahoca (2010), Dyer and Nobeoka (2000), Aravak (2003), Stonehous (2007).

5. Conclusion

It is concluded that web-based learning is associated with attitude of post-graduate students to knowledge management. Based on study findings, web-based learning has strong association with attitude of post-graduate students to knowledge management components including knowledge storage. The universities can increase implementation of knowledge management components including knowledge storage and we can increase web-based learning.

References

Amanlou DR (2011). Using web-based educational environment in teaching Mycology for students of pharmacology of Medical Sciences University of Zabol. Iranian Journal of Education in Medical Sciences, 11 (3): 230-237.

Amanzade A and Noan FM (2014). The impact of training based on new educational technologies on life skills of students in Universities of Mazandaran province. Journal of ICT in Educational Sciences, 4 (3): 145-162.

Ardakani S and Konjkav MA (2013). The analysis of condition of knowledge management dimensions in higher education institutions and evaluation of its relationship with innovation. Scientific-Research journal, New Approach in Educational Management, Islamic Azad University of Marvdasht, 5 (1): 103-120.

Ghahremani A, Hashempour L and Atapour H (2011). The study of condition of infrastructures of knowledge management in Tabriz University from the view of faculty members. Journal of Librarian and Academic Information, 45 (57): 63-85.

Gholami B, Abedi MH, Mojiri Sh, Ashrafi RH and Hodhodinejad N (2013). The governance of knowledge management factors in libraries of Medical Sciences University of Isfahan. Journal of Health Information Management, 11 (2): 169-176.

Jashapara A (2004). Knowledge Management: An Integrated Approach. Harlow, Essex: prentice Hall. Peearson Education Limited.

Keyvanara M, Yazdkhasti A, Bahrami S and Masoudian Y (2011). The relationship between knowledge management and organizational intelligence components in colleges of Medical Sciences University of Isfahan. Journal of Health Information Management, 8 (5): 673-680.

Khaki Gh (2008). Study method with an approach to thesis writing. Baztab publications, Tehran, Iran.

Khamushi F (2012). The comparison of e-learning with traditional learning. Tebyan publications, Tehran, Iran.

Kordi M, Rashidi F, Mazloum R, Khadivzade T and Akhlaghi F (2013). The comparison of the effect of web-based learning, Simulation and knowledge durability and skill of hemorrhage after delivery in midwifery students of nursing and midwifery school of Mashhad. Journal of Women and Midwifery, 16 (89): 8-14.

Namvar Y, Naderi A, Shariatmadari A and Naraghi M (2011). The impact of web-based learning with problem solving approach on logical thinking growth of English language students of Islamic Azad University of Ardebil. Research Journal in Curriculum, 8 (2): 1- 2.

Poursoltani ZH and Iraji NR (2013). The relationship between knowledge management and creativity of employees of main office of physical education of Ferdoosi University of Mashhad. Journal of Human Resources Management in Sport, 1 (1): 63-73.

Rajayi AA, Rajayipour S, Hoveida R and Movahedi F (2014). The relationship between knowledge sharing and improvement of scientific quality from the view of Faculty members in selected Universities of Isfahan. Journal of Health Information Management, 11 (6): 760-769.

Soo CW, Midgley D & Devinney TM (2002). The process of knowledge creation in organizations. Available at SSRN 376080.