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The Relationship between Information Literacy and Knowledge Management among Students and Faculty Members of Shiraz University

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ABSTRACT

Universities as the main knowledge creation centers in society need to strengthen their information literacy and knowledge management (KM) skills in order to achieve their objectives. In this regard, the aim of this study is to investigate the relationship between information literacy and KM in academic environments. The statistical population of the research includes students and faculty members of Shiraz University. The stratified random sampling method is used and the sample size is determined 136 students and 54 faculty members by using Morgan table. To collect the necessary data, two questionnaires of information literacy and KM have been used. To assess the level of information literacy and KM, descriptive statistics is used and to investigate the relationship between information literacy and components of KM, nonparametric Kolmogorov–Smirnov test and Spearman correlation coefficient are used. The findings show that the level of information literacy is estimated 3.30 for students and 3.60 for faculty members which are higher than average. The evaluation of the components of KM showed that KM is estimated an intermediate level (3.02) for students, and higher than the average (3.19) for faculty members. There is a significant relationship between students' information literacy and components of knowledge creation and knowledge storing. There are significant relationships between information literacy of faculty members and the four components of KM (creation, storage, sharing, and application). Finally, recommendations are provided according to the results to promote information literacy.

Keywords: Information Literacy, Knowledge Management, Students, Members of Faculty, Shiraz University
JEL Classification: D8

1. INTRODUCTION

Universities are considered as the main knowledge creation and dissemination centers in society. Creating innovations and consequently creating new knowledge has long been considered as the most important functions of academic institutions. In this regard, most efforts of the academic community are in enhancing knowledge and strengthening intellectual capital by taking advantage of existing resources. These resources include not only informatics resources, but also involve human resources and intellectual forces that are necessary to be applied and adopted through proper management methods (Saunders, 2012; Hawkins, 2000). Educational institutes and universities are including organizations that have an inevitable link with knowledge creation and its dissemination. Today, in the era of globalization, having information literacy, information sharing and knowledge management (KM) and institutionalized networks have become an important issue for policy makers, managers, and citizens (Hosseini and Poorasadi, 2011).

KM is the process of creating, collecting organizing, disseminating and exploiting knowledge. KM is based on the grounds that organizations have high volumes of data. These data include reports, financial data, tangible information and similar cases and organizations usually adopt different mechanisms to organize irregular data and changing it into information (Baghi, 2002). KM is the process of creating, collecting, organizing, disseminating and application of knowledge. These five factors in KM provide the background, education, feedback, retraining or removing training, which is usually required to create, preserve and restore the organization's capabilities (Bhatt, 2001).

The concept of information literacy is constantly changing and has been completed during different periods of human life. This

process involves the simplest state of literacy; i.e., skills needed by any person with respect to his role in society, including reading and writing skills and an understanding of his language (Bawden, 2001). Information literacy is a set of abilities needed to identify the information whenever is needed, and the ability to determine the location, evaluation and effective implementation of needed information (Feldman and Feldmann, 2000).

If anyone can identify his information needs, locate the needed information and use it for accessing the desired information and unraveling it to solve the problem and do something certain to be used effectively, he will be considered as information literate (Hosseini and Poorasadi, 2011). The main purpose and ultimate goal of information literacy are lifelong and independent learning (Owusu-Ansah, 2004). Information literacy skills are the most important tool which teaches students the permanent learning process in addition to preparing them to study in higher educational levels and provides them the tools to promote knowledge and update knowledge after university (Ghasemi, 2004). Information literacy is not limited to university and enjoys a special status in research and activities after the university (Nazari, 2005). Literacy, reading and information literacy is important in today's society and is one of the major indices of KM, especially in explicit knowledge. To prepare and train and promote information literacy, several actions can be taken (Gatchalk, 2009).

In this regard, this study aims to investigate the relationship between KM and information literacy among students and faculty members of Shiraz University. This study seeks to evaluate and measure information literacy skills, and KM components among students and faculty members and their comparisons among them, and then it discusses the relation between information literacy and KM. The research hypotheses have been formulated as follows:

1. The level of information literacy among students and faculty members is above average.
2. The level of KM among students and faculty members is above average.
3. There is a significant relationship between information literacy and KM.

Here's an overview of internal and external studies have been conducted in the field of information literacy and KM. Hooshmand et al. (2014) studied enabling factors in the development of KM process including "human resources, information technology, education and culture" and have identified four sub-processes of KM, "creating, storing, sharing and application of knowledge." Hashemi et al. (2012) evaluated the literacy level of faculty members of Islamic Azad University and had found that the information literacy of faculty members is at the intermediate level and above average. Also, the knowledge and skills of faculty members in the use of scientific databases are less than average. Zahedbabelan and Rajabi (2011) in the assessment of students' information literacy stated that the students' information literacy in five information literacy standards has been above average. Madhoushi and Niazi (2011) concluded that the status of all selected universities, in terms of KM index is not suitable and is less than the desired level. Salehi and Hajizadeh (2010), in the study of general computer literacy of staff at Islamic Azad University of Mazandaran province, concluded that general computer literacy of staff is lower than average. Pandpazir and Cheshmeh (2010) investigated the senior students' information literacy at Kermanshah University of Medical Sciences based on Eisenberg and Berkowitz model and showed that students' information literacy is above average. Asgharnia (2009) assessed and explained the information literacy of students in the Department of Psychology and Educational Sciences. They stated that the Information literacy of students is above average in any of the standards. Hassanzadeh (2004) concluded that in both forms, information literacy (research-oriented and organization-oriented) is considered as one of the pillars of KM in organizations.

Lwehabura (2016) have studied the information literacy skills of graduate students in Tanzania and found that there is a lack of information literacy in information searching skills and use of information and there is a need for information literacy courses for students. Kong (2014) assessed the development of information literacy skills in KM process and stated that digital approaches in teaching and learning environment, can develop information literacy skills and KM among students and professors. Thirion and Pochet (2009) assessed the level of information literacy of students of the French language in Belgium and showed a poor level of students' information literacy. Perrin et al. (2008) concluded that the inclusion of information literacy education in the curriculum of students is a need to improve the quality of students. Sparks and Hirsh (2000) in evaluating the information literacy of teachers in schools in Texas showed that higher information literacy skills are needed to have successful students and teachers.

2. MATERIALS AND METHODS

The present paper is applicable in terms of object and is descriptive-correlation in terms of the method. According to the hypotheses, research methodology consists of three parts: The first part includes the evaluation of information literacy level, the second part evaluates the components of KM at the university and the third part investigates the relationship between information literacy and KM. The population of the research includes graduate students and faculty members of Shiraz University, respectively. The stratified random sampling method was adopted; so that four faculties of Shiraz University had been selected and a random sampling of graduate students and faculty members has been conducted. Morgan table was used to determine sample size. The sample size is determined 136 students and 54 faculty members by using Morgan table. The sample size for each faculty is provided in Table 1.

Table 1: Sample size in faculties of Shiraz University

Row	Faculty	Graduate students	Faculty members
1	Sciences	25	12
2	Agriculture	35	14
3	Economics and management	28	10
4	Literature and humanities	48	18
Total		136	54

To collect data, two questionnaires of information literacy and KM have been used. Information literacy questionnaire is based on six great skills of Eisenberg and Berkowitz model in a form of 22 questions to identify people's information literacy capabilities (Pandpazir and Cheshmeh, 2010). KM questionnaire is based on Jashpara model which consists of four components of knowledge creation (12 items), stored knowledge (7 items), knowledge sharing (5 items) and application of knowledge (5 items) and has a total of 29 questions (Ashok, 2004). The questionnaires were based on 5-point Likert scale. Likert scale is scored from 1 to 5. The "1" represents the lowest and "5" represents the highest score. Items are distributed after a preliminary study and checking their validity and reliability. Respondents are asked to score their agreement or disagreement with statements (Salimi et al., 2008). In order to ensure the validity of the study, teachers and advisors and experts in this field were asked and necessary amendments were considered. Cronbach's alpha was used to assess the reliability of the questionnaire. Cronbach's alpha coefficient for information literacy questionnaire was 0.78 and for knowledge, management questionnaire was 0.81 which indicate a suitable reliability. Descriptive statistics and the average Likert points were used to assess the levels of information literacy and KM. To examine the relationship between information literacy and KM components, the Kolmogorov–Smirnov tests and Spearman correlation coefficient are used. Data analysis was done by SPSS software version 20.

3. FINDINGS

According to research hypotheses, findings are proposed in three parts in accordance to hypotheses testing. The results are evaluated and presented for the two groups of students and faculty members.

3.1. The First Hypothesis Test

The first hypothesis states that the level of information literacy among students and faculty are above average. The literacy level of students is tested, first. Results of the assessment of students' information literacy are given in Table 2. Six literacy skills were assessed using a Likert scale and the average obtained scores is reported. Among the six students' information literacy skills, understanding the need for information is estimated with an average of 3.73 as the highest average and using information with an average of 3.08 was the lowest average. Students' information literacy score is estimated 3.30, which is above the average.

In Table 3, the information literacy level of faculty members is evaluated. Among the six information literacy skills, combining new information with prior knowledge is estimated with an average of 3.95 as the highest average and assessment of searching process with an average of 3.13 was the lowest average. The information literacy score of faculty members is estimated 3.60, which is above the average. Comparison of information literacy levels in both groups showed that the information literacy level of the faculty members is higher than students. Thus, according to the assessment of information literacy level among students and faculty members, it can be stated that information literacy level was higher than average in both groups, and therefore the first hypothesis is confirmed.

3.2. The Second Hypothesis Test

The second hypothesis states that the level of KM among students and faculty are above average. The KM level of students is tested, first. Results of the assessment of students' KM are given in Table 4. KM consists of four main components. Knowledge storing is estimated with an average of 3.28 as the highest average and knowledge creating with an average of 2.83 was the lowest average. Students' KM score is estimated 3.02, which is above the average.

In Table 5, the KM level of faculty members is evaluated. Among the components of KM, knowledge storing is estimated with an average of 3.41 as the highest average and application of knowledge with an average of 3.02 was the lowest average. The

Table 2: Assessing students' information literacy level

Row	Skill	Average	Standard deviation	Min	Max
1	Understanding the need for information	3.73	0.36	2	5
2	Information searching strategies	3.12	0.41	1	5
3	Locating and access to information	3.23	0.42	1	5
4	Use of Information	3.08	0.61	1	4
5	Combining new information with prior knowledge	3.24	0.48	1	5
6	evaluation of searching process	3.41	0.27	1	5
Information literacy		3.30	-	-	-

Table 3: Assessing faculty members' information literacy level

Row	Skill	Average	Standard deviation	Min	Max
1	Understanding the need for information	3.81	0.47	2	5
2	Information searching strategies	3.75	0.55	1	5
3	Locating and access to information	3.54	0.65	1	5
4	Use of information	3.42	0.43	2	5
5	Combining new information with prior knowledge	3.95	0.35	2	5
6	Evaluation of searching process	3.13	0.39	1	5
Information literacy		3.6	-	-	-

Table 4: Assessing students' knowledge management level

Row	Component	Average	Standard deviation	Min	Max
1	Knowledge creation	2.83	0.31	1	4
2	Knowledge storing	3.28	0.47	1	5
3	Knowledge sharing	3.08	0.52	1	5
4	Application of knowledge	2.92	0.49	1	5
Knowledge management		3.02	-	-	-

KM score of faculty members is estimated 3.19, which is above the average. Comparison of KM levels in both groups showed that the KM level of the faculty members is higher than students. Thus, according to the assessment of KM level among students and faculty members, it can be stated that KM level was on average for students and was higher than average for faculty members; therefore, the second hypothesis is rejected.

3.3 The Third Hypothesis Test

The third hypothesis states that there is a significant relationship between information literacy and KM. To investigate the relationship between the two variables, the Kolmogorov–Smirnov test for checking the normality of data distribution is done in Table 6. The results of this test showed that the distribution of variables of information literacy and KM in both students and faculty members was significant and the hypothesis of data distribution non-normality will be accepted. Therefore, the non-parametric analysis is used to examine the relationship between the variables.

To examine the relationship between information literacy and KM, Spearman correlation coefficient was used. In Table 7, the results of this test on students of Shiraz University is provided. The results showed that the correlation between information literacy and knowledge creation (P = 0.002) and knowledge storing (P = 0.008) was significant. And the highest correlation was between information literacy and knowledge storing by a coefficient of 0.41. There is no significant relationship between information literacy and the two components of knowledge sharing and application of knowledge among students ($P \geq 0.05$). Therefore, the third hypothesis which indicates a significant relationship between information literacy and KM among students cannot be confirmed.

In Table 8, Spearman correlation test results are given for faculty members of Shiraz University. The results showed that the correlation between information literacy with all four components of KM was significant ($P \leq 0.05$). The highest correlation is between information literacy and knowledge creation (P = 0.004 and r = 0.56). The correlation coefficients of other components are estimated: Application of knowledge (P = 0.005 and r = 0.48), knowledge storing (P = 0.014 and r = 0.37) and knowledge sharing (P = 0.021 and r = 0.31). As a result, the third hypothesis is approved and there is a significant relationship between information literacy and KM.

Table 5: Assessing faculty members' knowledge management level

Row	Component	Average	Standard deviation	Min	Max
1	Knowledge creation	3.23	0.25	2	5
2	Knowledge storing	3.41	0.72	2	5
3	Knowledge sharing	3.11	0.74	1	5
4	Application of knowledge	3.02	0.72	2	5
Knowledge management		3.19	-	-	-

Table 6: Kolmogorov–Smirnov test

Variable	Sample	Average	Z Kolmogorov–Smirnov	P
Information literacy	Students	3.3	0.793	0.021
Information literacy	Faculty members	3.6	0.832	0.035
Knowledge management	Students	3.2	0.651	0.004
Knowledge management	Faculty members	3.19	0.452	0.009

Table 7: The relationship between information literacy and KM components among students

Component	Spearman correlation coefficient (r)	Sig. (P)
Knowledge creation	0.32	0.002
Knowledge storing	0.41	0.008
Knowledge sharing	0.12	0.064
Application of knowledge	0.08	0.071

KM: Knowledge management

Table 8: The relationship between information literacy and knowledge management components among faculty members

Component	Spearman correlation coefficient (r)	Sig. (P)
Knowledge creation	0.56	0.004
Knowledge storing	0.37	0.014
Knowledge sharing	0.31	0.021
Application of knowledge	48/0	005/0

4. CONCLUSION

This study aims to investigate the relationship between KM and information literacy among students and faculty members of Shiraz University. Three main hypotheses were developed to evaluate the level of information literacy, KM and the relationship between these two variables. The first hypothesis test results showed that the students' information literacy is 3.30, respectively which is higher than the determined average. Among the six skills of information literacy, students have a true understanding of their information needs. In terms of searching and combining new information with prior knowledge evaluation skills, the results are satisfactory. In the two skills of searching information strategies (determining available information resources) and how to use gathered information (extract useful information), the students have shown poor performance. The first hypothesis test results showed that the level of information literacy for faculty members is estimated to be 3.60 which has been above the determined average. The skill of combining new information with prior knowledge has achieved the highest score. The faculty members' understanding of their information needs was satisfactory and unlike students they are well aware of information strategies and have taken advantage of it. Locating and finding appropriate and new information are also in a good state. Among the six literacy skills, evaluating the result of the search process has won fewer scores. Therefore, the first hypothesis has been accepted and the level of information literacy of students and faculty members of Shiraz University has been above the average.

The second hypothesis test results showed that the level of KM for students is at the intermediate level of 3.02. Students have a good score in the component of knowledge storing. Knowledge storing refers to storing and maintaining of current knowledge in university and beyond this area and research projects and the method of being addressed to knowledge. The three components of creating, sharing, and application of knowledge are evaluated at average, and below average level. The second hypothesis test results showed that the level of KM for faculty members is estimated 3.19 which have been above average. Faculty members have achieved the highest score in the category of knowledge storing. Other components in order of average include knowledge creation, knowledge sharing, and application of knowledge. The level of all the components has been evaluated above average. The average level of KM for students was average and for faculty members above average, and therefore the second hypothesis is rejected for the students and is accepted for the faculty members.

The third hypothesis test results showed a significant relationship between students' information literacy and knowledge creation and knowledge storing. The highest correlation was between information literacy and knowledge storing by a coefficient of 0.41. There is no significant relationship between information literacy and two components of knowledge sharing and application of knowledge. The results of the third hypothesis test for faculty members states that there is a relationship between information literacy with all four components of KM. The highest correlation was between knowledge creation and information literacy (0.56), respectively. As a result, the third hypothesis is confirmed for faculty members indicating the existence of a significant relationship between information literacy and KM.

According to the obtained results, practical suggestions are presented. KM is considered as one of the pillars of development in the country and this management requires the establishment of strong leadership system in an academic environment, knowledge friendly working and scientific environment, and the possibility to convert and apply knowledge and the development of information literacy skills. It is suggested that a systematic planning can be conducted in order to strengthen the information literacy skills of students and to promote information literacy level of the students. In this case, we can see progress in the students' level of KM. The method of using obtained information is including a skill that is required to be strengthened by the participation of teachers and students in courses and meetings. Conducting more studies and applicable research can increase the level of information literacy, and given that information, literacy is introduced as one of the factors facilitating KM programs, it will improve the KM level among students.

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