

Received: 11 January 2013; Accepted: 25 February 2013

Conflict of interest: none declared.

© AVICENA 2013

DOI: 10.5455/msm.2013.25.28-31

ORIGINAL PAPER

Mat Soc Med. 2013 Mar 25(1): 28-31

Relationship Between Information Literacy and Creativity: A Study of Students at the Isfahan University of Medical Sciences

Ahmad Reza Raeis¹, Susan Bahrami², Mitra Yousefi²

Health Management and Economic Research Center, Isfahan University of Medical Sciences, Isfahan, Iran¹

Faculty of Education and Psychology, Isfahan University and Researcher of Health Management and Economy Research Center, Isfahan University of Medical Sciences, Isfahan, Iran²

Corresponding author: Susan Bahrami, PhD. Educational Administration, Faculty of Education and Psychology, Isfahan University and Researcher of Health Management and Economy Research Center, Isfahan University of Medical Sciences, Isfahan, Iran. Email: bahrami837@gmail.com

ABSTRACT

Introduction: In an era of huge volume of publications and information products, information literacy has become a very important survival tool. Information literacy is an instrument for individual empowerment that leads one to search for the truth and the desired information for decision making with independence. While creativity is the foundation of sciences and innovation, one of the main functions of universities is expanding the frontiers of knowledge and productions of scientific information. Therefore creativity is more vital and necessary for these kinds of institutions than other organizations. In this regard, this paper investigates the relationship between information literacy and creativity of students at the Isfahan University of Medical Sciences. **Method:** This is a correlation-descriptive study. Statistical population was third year students of Isfahan University of Medical Sciences (1054 individuals) in 2011. Sample size was 250 individuals selected by stratified random Sampling. The instruments for data collection were two questionnaires, an investigator made questionnaire for information literacy and a creativity questionnaire. For questionnaires validity used content validity and for their reliability used Cronbach Alpha Coefficient ($r_1=0.95$, $r_2=0.85$). SPSS 18 statistical software and descriptive and inferential statistics tests (Frequency distribution tab, Pearson Correlation, T test, Tukey test and ANOVA) were used to analyze data. **Results:** The results indicate that mean of information literacy was higher than average and mean of creativity was lower than average. There is a significant multiple correlation between 5 dimensions of information literacy (Ability to determine extent and nature of information, effective and efficient access, critical assessment, ability of purposeful application, ability of understanding legal and economic issues) and creativity in level of ($p \leq 0.05$). Also mean difference of ability of purposeful application based on gender was significant in level of ($p \leq 0.05$). It means the ability of purposeful application in male students was more than female students. **Conclusion:** We are living in the information age and one of the variables that are associated with creativity is information literacy. The results indicated that the students who are more creative are more information literate and can reach higher goals. Therefore we can contemplate that increasing information literacy in the universities and other scientific education centers plays an important role in teaching and training a creative workforce.

Keywords: Information Literacy, Creativity, Students, University.

1. INTRODUCTION

Now human societies have realized the value of information and its role in national development, society, economy and culture. New technologies in recent decades in production, distribution, transfer and using information has created dramatic changes, there are new information environments and information has changed in terms size, shape, mold, and the extent (1).

Today concept of literacy has changed and literacy in the mean of ability to read and write has changed into network information literacy. Therefore it is necessary that teachers getting to know about the basic principles and functions and finding information in information networks especially internet, and move to network literacy (ability to detect), access electronic

information and use information networks (2).

Information literacy is a facility to empower individuals and as a set of skills to identify and access the accurate sources of information and use them purposefully. Due to the nature of work, extensive communication with information resources and communication technologies, students requires to learn necessary skills of information literacy and this type of education is the key to lifelong learning (3).

Information literacy is a complex of ability that helps to place, evaluate and use effectively the needed information and detect when information is needed. In twenty-first century that has been called the Information Age, information literate citizens will be the cornerstone of a society that has potential

economic growth, where social justice is confirmed and people need information skills for doing professional, personal affairs and even entertainment (4).

Leo(1997) believes that in recent years we have entered an era that form and function of literacy will continue more quickly due to the appearance of new technologies of obtaining information. Therefore it is necessary to converge literacy and technology, then people will be able to respond the present and future needs of society (5).

Since the redundancy of information is one of the current problems of human life today and optimal choice for the promotion and development in less time and with low cost is very difficult, information literacy can be helpful in this case, so emphasis on learning and creating skills in this issue is inevitable (6).

When a person needs information, for filling the information vacuum, selects an information system and uses it. Selecting an information system is influenced by psychological, economic and cultural factors. Understanding individual experiences and expectations of a system, availability and specifications are examples of these factors (7).

In literature and logic of psychology, the issue of "creativity" is considered in discussions of intelligence and thinking and reasoning. Today scientists have recognized the value and importance of creativity for the individual and society and they emphasize it, because they all believe that art and science and technology is the product of human creative process and there is a correlation between creative process and them (8).

Creativity in the English language has split from the verb "to create" and means to create and cause of happening. Up to now many definitions of creativity are provided and different experts mentioned it from different angles. Some definitions have considered to individual capabilities and features, some considered to results and product of creativity and others considered to creative process and creative environment. Up to now, despite the importance of creativity, for various reasons in our country paid less attention to fundamental research and planning for creativity. However, we need a creative and innovative generation. Due to being in the Information Age, one of the variables that is directly associated with creativity, is information literacy. Increasing information literacy in universities and other academic education centers is important because they play an important role in teaching and training creative workforces (9).

Access and effective use of information is very important for all segments of society, especially students (3). Nowadays, information and knowledge for training workforce is one of the basic requirements for development. Information is such as blood vessels in education system and cells feeder in basic knowledge of pupils, students or others. After discussing the importance of information, it is better to discuss about how to access high quality information. Previous studies and evidence indicate the main way to access high quality information in lifetime is learning information literacy skills (10).

Creativity is the foundation of science and the main function of universities is expanding the frontiers of knowledge and producing the science, therefore creativity is more necessary for these institutions than other organizations (11). Sheikholeslami and Razavieh (2005) in study of the relationship between external and internal motivation and creativity of Shiraz university students showed that there is no significant relationship between external motivation and gender with the creativity of students,

but relationship between the degree of internal motivation and creativity of students is significant (12).

Pandpazir and Cheshmeh Sohrabi (2010) in study of the status of information literacy in higher education students, showed Kermanshah University of Medical Sciences with a mean of 3.37 higher than average (13). Zahed and Rajabi (2011) in study of mean of information literacy at University of Mohaghegh Ardabili showed the rate which measured in five standards, is higher than average (14).

Also the ANOVA test results showed the mean scores of two groups of male and female students in information literacy standards are different significantly. Webber & Johnston (2001) concluded that students realize searching for information and resources on the concept of information literacy and they emphasize on the role of information technology (15). Also Moradi & assistants (2005) indicated that increasing information literacy in universities and other academic education centers is important because they play an important role in teaching and training creative workforces (9).

2. METHOD

This is a correlation-descriptive study. Statistical society was third year students of Isfahan University of Medical Sciences (1054 individuals) in 2010-2011. Sample size was 250 individuals determined by stratified – random Sampling. The instrument for data collection was two questionnaire, an investigator – made questionnaire for information literacy based on Night model (2001) and a creativity questionnaire based on Raudsepp model (1999). For questionnaires validity used content validity and for their reliability used Cronbach Alpha Coefficient ($r_1=0.95$, $r_2=0.85$). SPSS 18 statistical software and descriptive and inferential statistics tests (Frequency distribution, Pearson Correlation, T test, Tukey test and ANOVA) were used to analyze data.

3. RESULTS

The results indicated that 40.2 percents (84 individuals) of participants was males and 59.8 percents (125 individuals) was females. Also 31.1 percents (65 individuals) of respondents were students of medicine, 10 percents (21 individuals) students of dental, 17.7 percents (37 individuals) students of nursing, 11 percents (23 individuals) students of management, 13.4 percents (28 individuals) students of pharmacy, 10.5 percents (22 individuals) students of rehabilitation, 6.2 percents (13 individuals) students of hygiene.

Index	Mean	Standard Deviations	Standard error	t
Ability to determine extent and nature of information	3.723	0.607	0.042	17.211
Effective and efficient access	3.381	0.563	0.038	9.781
Critical assessment	3.47	0.645	0.044	10.531
Ability of purposeful application	3.908	0.654	0.045	20.057
Ability of understanding legal and economic issues	3.549	0.631	0.043	12.569
Information literacy	3.494	0.458	0.031	15.598
Creativity	2.435	0.091	0.001	7.638

Table 1. Means and Standard Deviations for information literacy dimensions and creativity of students at Isfahan University of Medical Sciences

Dimension Component	Ability to determine extent and nature of information	Effective and efficient access	Critical assessment	Ability of purposeful application	Ability of understanding legal and economic issues
Creativity	r= 0.227 sig=0.001 =0.051	r= 0.312 sig=0.000 =0.097	r= 0.325 sig=0.000 =0.105	r= 0.212 sig=0.002 =0.044	r= 0.333 sig=0.000 =0.11

Table 2. Simple correlation among information literacy dimensions and creativity of students at Isfahan University of Medical Sciences

As shown in Table (1), at Isfahan University of Medical Sciences, measure of (t) in dimensions of information literacy (Ability to determine extent and nature of information, effective and efficient access, critical assessment, ability of purposeful application, ability of understanding legal and economic issues) is higher than table critical value in level of (p ≤ 0.05). So information literacy and its dimensions in students of Isfahan University of Medical Sciences are higher than average. At Isfahan University of Medical Sciences, measure of (t) in creativity is lower than table critical value in level of (p ≤ 0.05). So creativity in students of Isfahan University of Medical Sciences is lower than average.

Table (2) shows that Pearson correlation between dimensions of information literacy (Ability to determine extent and nature of information, effective and efficient access, critical assessment, ability of purposeful application, ability of understanding legal and economic issues) and creativity is significant in level of (p ≤ 0.05).

Index	ss	df	ms	R	R ²	F	sig
Variables	2.873	5	0.575	0.41	0.168	7.898	0.000
Scantling	14.769	203	0.073				
Total	17.643	208	0.648				

Table 3. Multiple regression among information literacy dimensions and creativity of students at Isfahan University of Medical Sciences

Table (3) shows that F which measured with 5 and 203 degree of free is higher than table critical value in level (α = 0.05). Therefore, there is a significant multiple correlation between dimensions of information literacy and creativity (p = 0.000). Multiple correlation coefficient is 0.41 and corrected determination coefficient is 0.168 therefore 17.0 percents of variance scedastic of students' creativity are influenced by dimensions of information literacy.

Index Variables	β	Beta	t _{ob}	P
Constant	2.59	-	16.955	0.000
Ability to determine extent and nature of information	0.060	0.125	1.434	0.002
Effective and efficient access	0.037	0.071	0.700	0.000
Critical assessment	0.071	0.157	1.571	0.014
Ability of purposeful application	0.030	0.066	0.758	0.004
Ability of understanding legal and economic issues	0.105	0.227	2.870	0.008

Table 4. Relationship between information literacy dimensions and creativity of students at Isfahan University of Medical Sciences

Based on table (4) prediction model can be demonstrated in below:

$$Y = 2.59 + 0.060 X_1 + 0.037 X_2 + 0.071 X_3 + 0.030 X_4 + 0.105 X_5$$

In comparison of dimensions of information literacy based on demographic variables, F which measured among dimensions of information literacy and course of students at Isfahan University of Medical Sciences, is not significant in level of (p ≤ 0.05) but among dimensions of information literacy and gender of students at Isfahan University of Medical Sciences, is significant in level of (p ≤ 0.05).

Dimensions of information literacy	Gender	Mean difference	Standard Deviations	sig
Ability of purposeful application	Male-Female	0.301	0.023	0.001

Table 5. Paired comparison of Mean difference and Standard Deviations of students at Isfahan University of Medical Sciences

LSD test results in Table (5) showed that mean difference of ability of purposeful application based on gender is significant in level of (p ≤ 0.05). It means the ability of purposeful application in male students was more than female students.

In comparison of student's creativity based on demographic variables, results showed that F which measured among creativity, gender and course of students at Isfahan University of Medical Sciences, was not significant in level of (p ≤ 0.05).

4. CONCLUSION

Today, access of information and ability of purposeful application is an important factor in achieving the desired position in life. Because the needs of individuals and communities, skills of obtaining information are like skills of reading and writing and they are main indicators of literacy. People of today's world are immersed in a sea of information, sea in which achieve most important, most useful and effective information of society, recognize the value of information, always desire to learn, be able to find and analyze information, evaluate the information content in a critically view, be able to build new knowledge by integrating new and old information (1).

Results showed that information literacy and its dimensions in students of Isfahan University of Medical Sciences are higher than average but creativity is lower than average. Also Sheikholeslami and Razavieh (2005) showed that relationship between the degree of internal motivation and creativity of students is significant (12). Pariokeh & Moghadas Zadeh (1999) also showed that most of the students are not are not equipped to information literacy skills, but they believe that they must achieve this ability (16). Pandpazir and Cheshmeh Sohrabi (2010) showed that status of information literacy in higher education students, at Kermanshah University of Medical Sciences is higher than average (13).

There is a significant multiple correlation between dimensions of information literacy and creativity (p = 0.000). Multiple correlation coefficient is 0.41 and corrected determination coefficient is 0.17 therefore 17.0 percents of variance scedastic of students' creativity are influenced by dimensions of information

literacy. Due to being in the Information Age, one of the variables that is directly associated with creativity, is information literacy. Also mean difference of ability of purposeful application based on gender was significant in level of ($p \leq 0.05$). It means the ability of purposeful application in male students was more than female students. Zahed and Rajabi (2011) in study of mean of information literacy at University of Mohaghegh Ardabili showed the rate which measured in five standards, is higher than average. The mean scores of two groups of male and female students in information literacy standards are different significantly (14). Also Moradi & assistants (2005) indicated that increasing information literacy in universities and other academic education centers is important because they play an important role in teaching and training creative workforces (9). Webber & Johnston (2001) concluded that students realize searching for information and resources on the concept of information literacy and they emphasize on the role of information technology (15).

In an era that huge volume of publications and information products has put down opportunity for us to study all of them, having the information literacy is very important. Information literacy is an instrument for individual empowerment that leads him to search for truth by individual skills in analysis, decision making and independent.

Information literacy as an essential provision for stepping into realm of the Information Age, refers to a set of capabilities that can help people to recognize when they need information and embark to placement, evaluate and use effectively the needed information.

REFERENCES

1. Rezvan Azin, Koukabi Morteza, Bigdeli Zahed. Investigating the information literacy among librarians of public libraries in Khuzestan Province in order to identify their potential strengths or weaknesses in this field. (Payam-e-ketabkhaneh (library message)) FALL. 2009; 15(3): 9-37. [Persian].
2. Assar Farideh. Information literacy or developing information literacy skills necessary for students to access and use information. Conference and training users in information literacy development of libraries, information centers and museums Mashhad Persian date Khordad 1383 1 and 2 May 2004. Mashhad: the organization of libraries, museums and documentation centers Astan Qods Razavi. 2004. [Persian].
3. Parirokh Mehri. اه هم ان رب و اه شور ، ميه افام : يتاع لاطا داوس شزوم آ. Teaching information literacy: Concepts, Methods and Programs. Tehran: Ketabdar, 2007.
4. ALA. Information literacy competency standards for higher education-introduction. 2002. Retrieved September 30, 2006, from: <http://archive.ala.org/acrl/il/toolkit/intro.html#f1>
5. Siamak Marzieh. Impact of Academic Life on Information Literacy of LIS Undergraduate Students national studies on librarianship and information organization. 2011; 21(4): 54-71. [Persian].
6. Almasi Zefre S. Evaluating the information literacy level of faculty members of Isfahan University [Thesis]. Ahwaz: School of Humanities Sciences, Ahwaz Science and Research Branch Islamic Azad University, 2008.
7. Nazeri Shapour. Study of information needs of medical students of Iran University of Medical Sciences. MS Thesis, Iran University of Medical Sciences, 1994.
8. Khosravani S. Creative relationship with the five factors of personality and mental health [dissertation]. Tehran, Tehran University, 2005. [Persian].
9. Moradi M, Jafari SE, Abedi MR. Happiness and personality, J cong Sci, 2005. [Persian].
10. Noroozi Chakoli, Abdolreza,. Information Literacy policies in the information societies. Conference and training users in information literacy development of libraries, information centers and museums Mashhad Persian date Ordibehesht 1383, May 2004. Mashhad: the organization of libraries, museums and documentation centers Astan Qods Razavi. [Persian].
11. Bohm D. One creativity. London, Routledge 11 New Fetter Lane, 1998.
12. Sheikholeslami Razieh, Razavieh Asghar. Shiraz University students predict creativity according to internal and external motivational variables and gender, Journal of Social Sciences and Humanities, Shiraz University, 2005; 22(4): 93-104. [Persian].
13. Pandpazir M, Cheshmeh Sohrabi M. A Survey on Information Literacy of Higher Education Students in Kermanshah University of Medical Sciences Based upon Eisenberg and Berkowitz's Six big skills : Information Science and Public Libraries The Quarterly Journal of Iran Public Libraries Foundation. 2010; 16(2):
14. Zahed Babelan A, Rajabi S. Survey on Information Literacy in University Students. Journal of Technology of Education. 2011; 5(4): 309-316. [Persian].
15. Webber S, Johnston. Information: Definition and Models; 2001, Accessed: dis.shef.ac.uk/literacy/definition.htm # bawd
16. Parirokh M, Moghadas-Zadeh H. Information Literacy: Research on how information literacy style. Journal of Literature and Human Sciences, Ferdowsi University of Mashhad. Spring and Summer. 1999: 334-317 [Persian].