

## Factors Effecting the Usage of ICT by the Teaching Members at Jerash University

Yousef Ahmad Aljaraideh<sup>[a],\*</sup>; Waleed Mahmood Shdoo<sup>[a]</sup>

<sup>[a]</sup>Faculty of Educational Sciences, Jerash University, Jordan.

\*Corresponding author.

Received 12 May 2014; accepted 28 July 2014

Published online 31 August 2014

### Abstract

This study aims at exploring the factors effecting the extent to which information and communication technology (ICT) is used by the teaching members at Jerash University (JU). For this purpose and based on the descriptive approach, a questionnaire was validly and reliably developed and applied to a randomly selected sample of 100 teaching members. A generally high extent of ICT usage was found. Moreover, no statistically significant differences were found in the aforesaid factors due to academic rank; however, they were found to exist in terms of self-efficiency due to faculty. Training courses are necessarily recommended to be held for the teaching members on the usage of ICT within the learning-teaching process.

**Key words:** ICT; Factors Effecting; ICT Usage

Aljaraideh, Y. A., & Shdoo, W. M. (2014). Factors Effecting the Usage of ICT by the Teaching Members at Jerash University. *Canadian Social Science*, 10(6), 222-226. Available from: <http://www.cscanada.net/index.php/css/article/view/5435> DOI: <http://dx.doi.org/10.3968/5435>

### INTRODUCTION

Information and communication technology (ICT) is today an essential tool that directly affects such various aspects of life as economy, science and education. It has helped improve human development and, thus, develop the technological skills of teachers. Universities are also of a vital important role in meeting societal needs and expectations, and—since we live in societies where

ICT has become a key part of life—they are required to assume their responsibility by including ICT into the learning-teaching process (Garcia-Valcarcel, 2009). In this respect, Light (2009) adds that, by including the multiple ICT tools, it helps expands student cognitive bases and develop critical and creative thinking skills. He also indicates that, for teachers become successful in using ICT within the teaching process, they have to plan and prepare well for lessons, maintain updated activities and have a variety of learning strategies. Therefore, to use ICT alone does not help achieve the learning objectives as there should be teachers who can effectively make use of such ICT tools. Several factors have been defined to affect the usage of ICT by (university) teachers, most importantly the emotional aspect, advantage and self-efficiency.

In context of ICT usage in university teaching, Hue (2013) attempted to descriptively define the extent to which ICT was used by the a sample of 109 teaching members at the public universities of Vietnam. It was indicated that the subject teaching members had not been using ICT a lot in spite of their highly positive attitudes toward it in general. Similarly, a sample of teaching members at Ontario University in Canada was selected by Laronde (2010). Two instruments were applied in this study: a questionnaire ( $N=55$ ) and personal interview ( $N=21$ ). It was found that the teaching members had been often employing ICT in teaching but with some kind of disparity in terms of how confident and how long to use ICT due to several factors such as professional development, lack of time to learn IT skills and technical difficulties.

Furthermore, Abu Qudais et al. (2010) also found positive attitudes of 251 retired teaching members at the Jordanian universities toward the usage of ICT. He found that they had been then willing to be trained and practice such technology. However, no statistically significant differences were found in the attitudes the subject members due to sex, faculty, experience, university or

country of graduation. In the same respect, a model was developed and applied by Usluel et al. (2008) in order to know how ICT had then been used by a sample of 814 teaching members in Turkey. The model was successful as it interpreted 60% of this ICT usage. However, to realize the properties and advantages of using ICT was found not to help predict that it had been really used.

The usage of the Internet as an ICT tool has also been researched in terms of learning. In this respect, the attitudes of 289 postgraduate students in Malaysia toward the computer and the Internet were examined by Abedalaziz et al. (2013). The subject students were found to demonstrate positive attitudes and no statistically significant differences were found due to sex or major. Moreover, Shdaifat (2007) attempted to define the effect of using the Internet in academic attainment. This study was applied to the master's students taking *Educational Planning* in the 2005/2006 semester at Al Albayt University in Jordan. The sample was divided into a control group ( $N=29$ ) taught by the traditional method and experimental group ( $N=28$ ) taught via the Internet. In fact, statistically significant differences were found in the students' academic attainment due to the teaching method in favor of the experimental group but not to sex.

The Internet as used in university teaching and academic research has also been seen a common topic of research. Shuqair (2009) descriptively examined the usage and related advantages of the Internet to the teaching members at Damascus University. In fact, no statistically significant differences were found due to teaching experience or academic rank. Similarly, no statistically significant differences were found by Mohammad (2007), in his study applied to 161 teaching members at Hashemite University in Jordan, due to teaching experience—but found due to sex and academic rank. In the same respect, the Internet was found by Barakat (2008) to be widely used on a daily basis (3-7 hours) for 38% of 166 teaching members at a number of Palestinian universities. In particular, the most important reasons to use the Internet were to find previous studies and get any academically relevant updates and documents.

#### **A. Importance of the Study**

a). Importance of the study lies in two things. First, it helps explore the attitudes of the teaching members at Jerash University (JU) toward ICT.

b). Also, it helps define the extent to which ICT is employed by the JU teaching members.

#### **B. Limitation of the Study**

On the other hand, this study is limited to

a). The measurement of the factors affecting the ICT usage.

b). The JU teaching members during the first semester of 2013/2014.

c). The questionnaire-based descriptive approach.

As to the procedural definition of ICT, information and communication technologies are a diverse set of

technological tools and resources used to communicate, and to create, disseminate, store and manage information (Blurton, 1999). In this respect, ICT includes the use of computer technology, including hardware, peripheral devices, media, delivery systems and software. The ICT term is used in the ISTE NETS standards and is used by UNESCO in reference to the integration of technology into teaching (UNESCO, 2002).

#### **C. Problem of the Study**

The Problem of the study is determined by the following questions:

a). To what extent is ICT used by the JU teaching members?

b). What are the factors affecting the extent to which ICT is used by the JU teaching members?

c). Are there any statistically significant differences at ( $\alpha \leq 0.05$ ) in the factors affecting the extent to which ICT is used by the JU teaching members due to their faculties?

d). Are there statistically significant differences at  $\alpha \leq 0.05$  in the factors affecting the usage of ICT by the JU teaching members due to academic rank?

---

## **1. METHODOLOGY**

---

### **1.1 Population and Sample**

The population of the study composed of all teaching members at the JU, Kingdom of Jordan in the academic year 2013/2014. However, the sample of the study consisted of (100) male and female teaching members from the scientific and humanitarian colleges.

### **1.2 Instrument**

Having referred to the related literature (e.g. Hue, 2013; Abed Alaziz, 2013), a questionnaire was developed for measuring the factors affecting the usage of ICT by the JU teaching members. Based on the descriptive approach and the five-point Likert Scale, the questionnaire consisted of three main parts: a) personal information such as the faculty and academic rank, b) a list of ICT instruments and c) the factors affecting the usage of ICT by the teaching members. This research instrument was intended to apply to all the 192-member population at JU for the first semester of 2013/2014. However, the selected sample consisted of 100 teaching members (52%) and was sufficiently representative (cf. Pullent, 2003).

In terms of validity, the aforesaid questionnaire in its initial version was referred by 10 teaching members. The referees were specialists of information technology, teaching technology and educational assessment at JU. In fact, a set of amendments was recommended by the referees as to develop the wording and delete some statements for being unrelated. Such opinions were taken into account and the questionnaire finally consisted of 22 statements distributed to three aspects: the emotional aspect, advantage of ICT usage and self-efficiency.

Furthermore, the questionnaire was made reliable and internally consistent by using Cronbach's Alpha for each instrumental aspect. Table 1 below explains this coefficient of reliability for the whole questionnaire in general and each aspect in particular. As the coefficient of reliability was found to range between 0.85 and 0.91, the questionnaire had then a high level of reliability to be confidently used (cf. Pallent, 2003).

**Table 1**  
**Instrumental Reliability of the Questionnaire**

Aspect	Number of statements	Mean	Reliability coefficient
Emotional	7	3.7	0.86
Advantage	8	4.1	0.85
Self-efficiency	7	3.6	0.91
Total	22	3.9	0.89

## 2. DATA ANALYSIS AND DISCUSSION

**A. Question 1: To what extent is ICT used by the JU teaching members?** For this question, the means and standard deviations were found for the extent to which ICT is used (see Table 2).

As seen in Table 2, the most frequently used ICT tool by the JU teaching members was the Computer ( $M=3.79$ ;  $Std. D=1.1$ ). It was followed by the Internet ( $M=3.67$ ;  $Std. D=0.59$ ). Both tools (the Computer and the Internet) were of high extents of usage. The other ICT tools came last ( $M=3.62$ ;  $Std. D=0.37$ ) and were of a moderate extent of usage. Furthermore, the usage of e-gates, emails and search engines within the Internet field was of high extents. The usage of e-learning, online exams and the Internet as a teaching method, however, came with a moderate extent. This indicates that the Internet tools were lowly being used by the JU teaching members in teaching and below the required level. Table 2 also shows that the usage of ICT tools by the JU teaching members within the Computer field was of a high extent in terms of personal computer, laptop and Microsoft Word. However, the usage of the Computer as a teaching method by the same members came with a low extent.

The findings above came in line with Barakat (2008) and Tue (2003) but were different from Loroude (2010). They could be attributed to that most of the JU teaching members use their personal computers for both purposes of communication with others and of academic research. The non-usage of such ICT tools inside classrooms and in teaching in general could be attributed to the unavailable infrastructure represented by the Data Shows and the Internet connections in classroom, the matter which appeared as an obstacle to their being used within the learning-teaching process.

**Table 2**  
**Means and Standard Deviations Of The Extent ICT Is Used By The JU Teaching Members For Each ICT Tool**

ICT Tool	Statements	Mean	Std. D.	Usage extent
The Internet	1. E-gate.	4.21	0.89	High
	2. E-mail.	3.93	0.93	High
	3. Search engines, e.g. Google, Yahoo and YouTube.	3.83	1.00	High
	4. Web pages.	3.81	1.00	High
	5. E-learning or video conference.	3.49	0.94	Moderate
	6. Online exams.	3.23	1.30	Moderate
	7. The Internet as a teaching instrument.	3.21	1.20	Moderate
	Subtotal:	3.67	0.59	Moderate
The Computer	8. Personal computer.	4.37	1.10	High
	9. Laptop.	4.25	0.92	High
	10. Microsoft Word.	4.22	1.10	High
	11. Microsoft powerpoint.	3.86	1.00	High
	12. Microsoft Publisher.	3.65	0.89	Moderate
	13. Microsoft Exile.	3.31	1.20	Moderate
	14. The computer as a teaching instrument.	2.93	1.00	Moderate
	Subtotal:	3.79	1.10	High
Other Tools	15. Data Show.	4.04	0.61	High
	16. CD, DVD.	3.95	0.82	High
	17. Multimedia.	3.73	0.81	High
	18. Sound forge, movie maker, camtasia and u-lead.	3.69	1.00	Moderate
	19. Smart phone.	3.53	0.85	Moderate
	20. Printer.	3.48	1.00	Moderate
	21. Smart board.	3.00	0.74	Moderate
	Subtotal:	3.62	0.37	Moderate
<b>Total:</b>		<b>3.89</b>	<b>0.30</b>	<b>High</b>

**B. Question 2: What are the factors affecting the extent to which ICT is used by the JU teaching members?** In order to answer this question, means and standard deviations were found for the extent to which multimedia is used (see Table 3).

As seen in Table 3 above, the most important factor affecting the extent to which ICT is used by the JU teaching members in terms of the emotional aspect was their conviction that "using ICT is difficult and complex" ( $M=3.98$ ;  $Std. D=0.14$ ). Furthermore, Statement no. 1 "ICT expands the two frameworks of technology and knowledge" was given a mean of 3.40 and standard deviation of 0.53 and all the statements in terms of advantage were given high means ranging between 4.03 and 4.28. This indicates that the JU teaching members feel of large advantage by using ICT. Moreover, it was found that all the statements in terms of self-efficiency were of high means ranging between 3.68 and 4.31, except for Statement no. 22 "I am capable of delivering ICT-related courses" getting a mean of 3.56 and standard deviation of 1.1 and a moderate extent of usage. Such findings are in line with Loroude (2010), Usluel (2008) and Abo Quadais (2010).

**Table 3**  
**Means and Standard Deviations for the Factors Affecting the Extent to Which ICT Is Used by the JU Teaching Members**

Aspect	Statements	Mean	Std. D.
Emotional	ICT expands the two frameworks of technology and knowledge.	3.40	0.53
	ICT offers big contributions to the human life.	3.42	0.49
	ICT makes the society more advanced and more civilized.	3.44	0.44
	ICT helps me be informed and get what I need of information.	3.42	0.39
	ICT helps me deliver my lessons in a very effective and efficient manner.	3.96	0.19
	ICT helps me accomplish my job in a good manner.	3.96	0.28
	I think that using ICT is difficult and complex.	3.98	0.14
	<b>Subtotal:</b>	3.65	0.30
Advantage	ICT expands the two frameworks of technology and knowledge.	4.28	0.82
	ICT offers big contributions to the human life.	4.20	0.81
	ICT makes the society more advanced and more civilized.	4.18	0.68
	ICT helps me be informed and get what I need of information.	4.16	0.65
	ICT helps me deliver my lessons in a very effective and efficient manner.	4.14	0.80
	ICT helps me accomplish my job in a good manner.	4.12	0.92
	ICT saves my time and effort.	4.06	0.88
I think that ICT is an important tool for enriching teaching material with examples, experiments, exercises ...etc.	4.03	0.88	
	<b>Subtotal:</b>	4.14	0.55
Self-efficiency	I need a specialist nearby as I am using ICT.	4.31	0.88
	I can solve the problems I face when I am using ICT.	3.92	1.10
	I can reach the best ICT practices without the help of others.	3.99	1.20
	I can learn the ICT things I need by myself.	3.73	0.77
	I can use ICT by myself.	3.70	0.86
	I think that I have the basic skills to use ICT.	3.68	0.71
	I am capable of delivering ICT-related courses.	3.56	1.10
	<b>Subtotal:</b>	3.84	0.65
	<b>Total:</b>	<b>3.89</b>	<b>0.30</b>

**C. Question 3: Are there any statistically significant differences at ( $\alpha \leq 0.05$ ) in the factors affecting the extent to which ICT is used by the JU teaching members due to their faculties?** In order to answer this question, means and standard deviations were found and T-test was used (see Table 3).

**Table 4**  
**Means and Standard Deviations and T-Test for the Factors Affecting the Extent to Which ICT Is Used by the JU Teaching Members Due to Their Faculties**

Aspect	Variable	Mean	Std. D.	T	Sig.
Emotional	Humanities (11)	3.93	0.26	1.112	0.945
	Sciences (126)	3.49	0.18		
Advantage	Humanities (11)	4.51	0.30	0.695	0.773
	Sciences (126)	3.93	0.56		
Self-efficiency	Humanities (11)	3.40	0.23	8.703	0.000
	Sciences (126)	4.08	0.69		
Total	Humanities (11)	3.97	0.19	1.695	0.552
	Sciences (126)	3.84	0.34		

As seen in Table 4 above, there are no statistically significant differences at ( $\alpha \leq 0.05$ ) in the factors effecting the extent to which ICT is used by the JU teaching members due to their faculties (humanities or sciences) for the instrument as a whole in terms of the emotional aspect

and advantage. This could be mostly attributed to the similar infrastructure, equipment and computer labs of all the faculties. However, statistically significant differences exist in terms self-efficiency in favor of the teaching members at the faculties of sciences because of their scientific backgrounds and because the computer labs are largely more available for such faculties than those of humanities. This finding comes in line with Abo Quadais (2010) in that there are no differences in the attitudes of the teaching members toward the ICT usage due to either sex, faculty, experience or country of graduation.

**D. Question 4: Are there statistically significant differences at  $\alpha \leq 0.05$  in the factors affecting the usage of ICT by the JU teaching members due to academic rank?** In order to answer this question, the means and standard deviations were found and the one-way analysis of variance (ANOVA) was used for the factors affecting the extent to which ICT is used by the JU teaching members due to their academic rank (see Table 4 below).

As seen in Table (5) above, there are no statistically significant differences ( $\alpha \leq 0.05$ ) in the factors affecting the usage of ICT by the JU teaching members due to academic rank (assistants, associates and professors) for the instrument as a whole and for each aspect. This could be attributed to all the teaching members' attitudes, feelings and big interest as they are convinced of the importance and advantage of ICT irrespective of their academic ranks (cf. Mohammad, 2007; Saeed, 2009).

**Table 5**  
**Means, Standard Deviations and One-Way Analysis of Variance (ANOVA) for the Factors Affecting the Extent to Which ICT Is Used by the JU Teaching Members Due to Their Academic Rank**

Aspect	Variable	Mean	Std. D.	Source of Variance	SS	df	MS	F	Sig.
Emotional	Assistant (61)	3.8009	0.29193	Bet. Groups	3.391	2	1.695	0.936	0.555
	Associate (27)	3.4074	0.10997	Wit. Groups	5.596	97	0.058		
	Professor (12)	3.4643	0.12372	Total	8.987	99			
Advantage	Assistant (61)	4.3643	0.30129	Bet. Groups	11.318	2	5.659	1.900	0.593
	Associate (27)	3.5989	0.48166	Wit. Groups	19.632	97	0.202		
	Professor (12)	4.2972	0.46814	Total	30.949	99			
Self-efficiency	Assistant (61)	3.6404	0.03608	Bet. Groups	14.127	2	7.064	0.993	0.867
	Associate (27)	3.8475	0.55912	Wit. Groups	28.562	97	0.294		
	Professor (12)	4.8464	0.59853	Total	42.690	99			
Total	Assistant (61)	3.9583	0.24706	Wit. Groups	3.409	2	1.704	1.280	0.342
	Associate (27)	3.6145	0.26244	Total	5.643	97	0.058		
	Professor (12)	4.1894	0.13122	Bet. Groups	9.051	99			

## RECOMMENDATIONS

In light of the research questions and present findings as stated above, it is highly recommended to:

A. Hold training courses for the JU teaching members on the usage and employment of ICT, and the Internet in particular, inside classrooms and also giving students computerized, delivered-online tasks.

B. Effectively activate the usage of ICT so as to include homework, computerized classes, e-learning and online exams.

C. Make available personal computers and laptops to the teaching members' offices and computer labs, particularly at the faculties of humanities in order to be made use of in either teaching or academic research.

D. Conduct further research on the usage of ICT by both the students and teaching members at the other Jordanian universities.

## REFERENCES

Abedalaziz, N., Jamaluddin, S., & Leng, C. (2013). Measuring attitudes toward computer and internet usage among postgraduate in Malaysia. *The Turkish Online Journal of Educational Technology*, 12(2), 200-216.

Barakat, Z. (2008). The reality of usage of the Internet in academic research by the teaching members at the Palestinian universities. *A paper submitted to the Fourth international conference on Cairo University first anniversary on December* (pp.16-18). Cairo University.

Blurton, C. (1999). New directions of ICT- Use in education. UNESCO World information and communication report 1999. Retrieved October 2007 from <http://www.unesco.org/education/educprog/lwf/dl/edict.pdf>

García-Valcárcel, A., & Tejedor, F. J. (2009). Training demands of the lecturers related to the use of ICT. *Procedia - Social and Behavioral Sciences*, 1(1), 178-183.

Hue, L., & Ab Jalil, H. (2013). Attitudes towards ICT integration into curriculum and usage among university lecturers in Vietnam. *International Journal of Instruction*, 6(2), 54-66.

Laronde, G. (2010). *A study of information and communication technology integration by faculty teaching in a Ubiquitous laptop bachelor of education program*. PhD thesis, University of Toronto, Canada.

Light, D. (2009). *The role of ICT in enhancing education in developing countries: Findings from an evaluation of the Intel teach essentials course in India, Turkey, and Chile*. Education Development Centre.

Mohammad, J. (2007). Assessment of the teaching members' opinions at Hashemite university on the usage of the Internet in academic research. *Damascus University Journal*, 23(1), 273-308.

Pallant, J. (2006). *A step by step guide to data analysis using SPSS for Windows* (Version 12). Buckingham, Philadelphia: Open University Press, .

Qudais, M., Al-Adhaileh, M., & Al-Omari, A. (2010). Senior faculty members' attitudes in Jordanian universities towards using information and communication technology. *International Arab Journal of e-Technology*, 1(4), 135-141.

Shdaifat, Y. (2007). The effect of the internet on the maser students' academic attainment in educational planning at Al Albayt University. *Jordanian Journal of Educational Sciences*, 3(1), 1-9.

Shuqair, B. (2009). Usage of the internet by the teaching members at Damascus university and related advantages. *Damascus University Journal*, 25(1), 455-499.

UNESCO. (2002). In P. Resta (Ed.). *Information and communication technologies in teacher education: A planning guide*. UNESCO, Paris. Retrieved April 20, 2007 from <http://unesdoc.unesco.org/images/0012/001295/129533e.pdf>.

Usluel, Y. K., Aşkar, P., & Baş, T. (2008). A structural equation model for ICT usage in higher education. *Educational Technology & Society*, 11 (2), 262-273.