THE ROLE OF LECTURERS' DEMOGRAPHIC AND PROFESSIONAL CHARACTERISTICS TOWARDS ICT UTILIZATION (THE CASE OF PAKISTANI UNIVERSITIES)

Shahbaz Ahmad

M.A (Education), Ph.D (ICT)
University of Agriculture, Faisalabad
Pakistan
Email: shahbazmy@yahoo.com

The ICT (Information & Communications Technology) utilization in instruction among university and college lecturers is gaining in prominence in many countries in the world, including Pakistan, for the purpose of globalization and enhancing the quality of instruction and learning. The purpose of the study was to examine the benefits of ICT utilization, the extent of success factors, problems and constraints encountered in ICT utilization in instruction among lecturers in universities of Islamabad. A cross-sectional questionnaire survey was used to find out the level and extent of ICT utilization in universities of Islamabad. The sample from the study consisted of 260 lecturers drawn from the 14 universities of Islamabad. The data was analyzed using descriptive and inferential statistics such as Pearson correlation, and chi square. Results of the study shows that there are significant relationships among the 14 areas of ICT utilization, significant relationships t relationships between ICT utilization and university demography.

Also there are positive correlations between ICT utilization and some demographics such as personal experience of computer using, frequency of ICT using, computer using at home, ICT training duration, extent of ICT knowledge, awareness of ICT and ICT written / published in university. The findings of this study could be used to improve quality of theaching among lecturers and to design a training model for instruction among lecturers in the pursuit of enhancing excellence and quality of universities education.

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Key Words: university, Pakistan, information and communication technologies

Introduction

Quality ICT using has become a basic for advanced industrial society development in a short time. Being an expert in ICT and knowing the basic command together with skills and concepts of Information and Communication Technology are highly respected and important in many countries. Information and Communication Technology are being utilized at very high rate in quality learning and success teaching. This study endeavors to measure the extent

of available ICT, levels of its utilization, to determine the relationship between extents of technology utilization with university characteristics and instruction among lecturers' characteristics, amount of budget spent and factors affecting ICT utilization in instruction among lecturers of Pakistani capital universities.

Jones and Preece (2006) reported that online learners (and lecturers) need to study to "trust the technology" for technological performance as well as enhance the uptake and reduce resistance to technology. Lecturers need to be confident and competent in using various ICT tools to build their trust in the technology. Without their competency and mastery skills of ICT utilization appropriate to their needs, ICT could not be put into good using for instructional delivery. Barker (2001) stated that this should possess a range of multiple communication and technical skills along with using the chat rooms, web page authoring, word processing skills and using different kinds of Information and Communication Tools like File Transfer Protocol (FTP), compress and decompress of files, e.g. Win zip etc.

Technology can be helpful in decreasing absenteeism, lower dropout rates and motivate more students to continue on to university. Students take more pride in their work while using technology, gain more confidence in their abilities, and develop a higher level of self-esteem. Furthermore, researchers have mentioned that ICT utilization in instruction among lecturers alleviates many teaching difficulties, controlling and administrating large number of students, and teachers express positive opinion about it (Altun, 1996). Most universities seem not yet ready to implement ICT utilization. The reason for this low uptake may vary from university to university.

Generally speaking, some of the more prominent constraints include, among other things, substandard technology infrastructure delivery and support; low funding; failure to localize technologies; low levels of instruction among lecturers / facilitators' expertise and / or commitment coupled with a shortage of educational technology, instructional design, and learning development staff; low levels of student accessibility to the Internet; bandwidth availability and / or accessibility; and non-suitability of academic content and goals to such designs. Thus, in order to keep lecturer and trainers updated with current technological changes, related studies on technological utilizations should be conducted on a regular basis.

This study is carried out to analyze ICT utilization that is necessary for instruction among lecturers of the capital universities of Pakistan. Chen (1995) investigating the perceptions and network performance in Taiwan, reported that overall network staff and lecturers' perceptions toward network organization (NBINET) were not quite positive. The major factors in lecturers' negative perceptions were: inability of the governing body to carry out its policies, added workload, slow response, limited number of skilled technicians, lack of motivation, and dissatisfaction with the hit rate. Chen further investigated the feasibility of the information-sharing network establishment in Riyadh, Saudi Arabia and found that the existing cooperative activities among Saudi universities were also ineffective and inadequate.

He determined a number of factors hindering cooperation including lack of comprehension of the value of such a network, lack of standardization in technical processing, limitation of financial resources, lack of initiative of professional associations, and administrative problems. Chen suggested the exploitation of Internet to implement cooperative networks for physical linkage and to consider the human factor as the most critical for its implementation. It was discovered that the variables most often identified as contributing to receptivity or resistance to changes are:

- Members' participation in decision-making and implementation;
- Perceived availability of training and skills enhancement opportunities;
- Presence of entrepreneurs;
- Gender and age related issues;
- Prior experience with technology;
- Specialization within the organization;
- Degree of professionalism within the organization;
- Organizational slack;
- Fear of technology in general and computers in particular;
- Fear of changes;
- Perceived threats to job security or status;
- The distribution of expertise;
- The presence or absence of feedback and interaction;
- Unionization;
- Patterns of employees' hiring and rewarding.

This study discovered the overall positive perceptions of ICT utilization in education processes in universities. Most of the demographic variables such as gender, age, highest degree obtained, functional areas of instruction among lecturers, and length of experience were not significantly related to individuals' perceptions toward computers. The transfer from print to online education formats was inevitable but would take place gradually, because of the shortage of trained human resources, and ICT tools. Chen (1995) suggested that lecturers training keep pace with ICT developments and changes. He stated that lecturers should not fear computers and should take them as tools to help in different operations. Lecturers' training should shift to computer science and application of computer technology in universities.

Khan (2005) mentioned that the changes occurring due to ICT application would affect the instructors' role. He pointed out that basic functions of information would remain the same, but the methodology and formats of information would drastically change. Wilkins (1999) reported that the educational environment would continue to be influenced by technology and users' needs. It would be a governed by global policies that would ensure access to information for a diverse community. The lecturer was seen as playing a role of tutor, mentor, coach and client / student consultant.

Theoretical Framework

In studying user acceptance and technology use, the Technology Acceptance Model (TAM) is one of the most cited. The TAM was developed by Davis (1989) to explain computer-usage perception. The theoretical basis of the model was Fishbein and Ajzen's Theory of Reasoned Action (TRA). The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use technology. According to this model when lecturers are presented with a new software package, a number of factors influence their decision on using it. They are: Perceived usefulness (PU), defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance" and Perceived ease-of-use (PEOU) defined by Davis as "the degree to which a person believes that using a particular system would be free from efforts" (Davis, 1989).

Task-technology fit (TTF) theory holds that ICT is more likely to have a positive impact on individual performance and be used if the capabilities of the ICT match the tasks that the lecturer must perform. Goodhue and Thompson (1995) developed a measure of task-technology fit that consists of 8 factors: quality, locate ability, authorization, compatibility, ease of use / training, production timeliness, systems reliability, and relationship with lecturers.

Self efficacy is people's perception of their ability to plan and take action to reach a particular goal. Computer self-efficacy (CSE) refers to individuals' judgment of their capabilities to use computers in diverse situations. Computer Self-Efficacy (CSE) constructs is a specialized definition referring to peoples' belief in their ability to accomplish a special task. The concept of SE was developed by Bandura (1986) from the social cognition literature. Bandura noted that SE is affected by past experience, observing others, persuasion and affective arousal (Fig. 1).

Research Methodology

The subjects for this study were the lecturers working in universities of Islamabad, Pakistan. The lecturers were chosen to complete the questionnaire because they were assumed to be the most influential personnel involved in decision-making, obtaining funds, devising ICT innovations, initiating ICT in instructional proposals and implementing ICT utilization and technology developments in their universities. It has also been acknowledged the lecturers' key role in initiation, getting resources and utilizing ICT in instruction in universities. A comprehensive questionnaire was developed to answer the research question. The questionnaire was designed using mostly closed-ended/structured questions, check boxes and Likert type rating scale. ICT is easy for respondents to answer the structured questions and easy for the researcher to analyze and interpret. A perception rating scale yields a single score that indicates both the direction and intensity of a person's perception. ICT helps to differentiate those respondents with strongly agree perception from those with strongly

disagree perception. These categories enable the users to make a choice from a range of possible values in questionnaires (Henerson et al., 1987). Likert's perception measuring technique helps to represent an individual's perception toward an object, using one preference score or average "most acceptable" position on a continuum of positions, which range from strongly agree to strongly disagree.

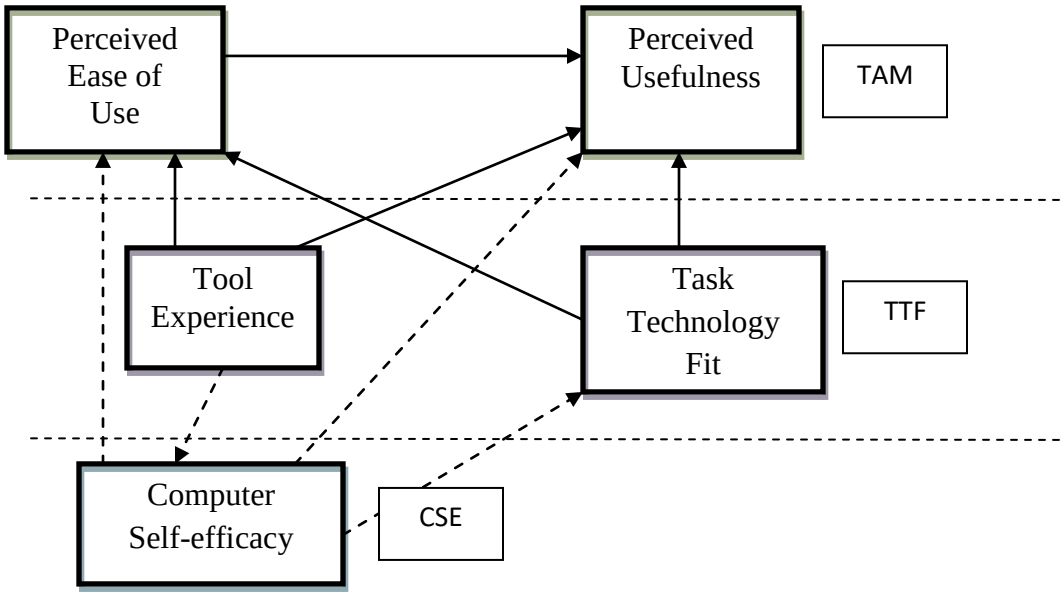

Figure 1 - Theories on ICT utilization in instruction / instructional effectiveness
(Davis, 1989; Goodhue, 1995; Bandura, 1986)

Data Collection

A survey questionnaire was used as an instrument to obtain primary data from the lecturers of 17 sampled universities of Islamabad. The survey questionnaire method is commonly used to investigate the status of tools, techniques and applications, changes over a certain period of time, opinions and characteristics of individuals and characteristics of universities. After pre-testing and pilot study in December 2009, the final questionnaire was prepared and mailed in December 2009 to 850 sampled lecturers working in universities in Islamabad, Sargodha and Lahore, Pakistan.

The questionnaire was accompanied by a cover letter as well as a self-addressed return envelope requesting completion and return of the questionnaire as soon as possible. Given the low response rate in mail surveys, a number of steps were taken to improve the response rate. These steps included:

• Two reminders were made, using email / telephone.

• The target respondents were also reminded personally as well as through professional colleagues and friends across Islamabad.

• Personal visits and follow-up calls were also made to some respondents for confirmation of some of the information they provided in the questionnaire and to ensure that the questionnaire was filled by the intended respondents.

Out of 850 questionnaires administered, 269 (31.64%) completed questionnaires were received. However, in 9 questionnaires, a major part of the ICT utilization and demographic information was incomplete. Finally, 260 (30.58%) questionnaires were used for data analysis and interpretation.

Professional Qualification of the Respondents

Respondents were asked to check four different categories from Master degree to Doctorate degree and the others.

Tab. 1 shows the distribution of frequency and percentage of the scores for professional qualification of instruction among lecturers in universities of Islamabad. Three levels of professional qualification were reported and the distribution was given as in the Tab. 2. It was mentioned that 100 (38.5%) of the respondents held MS/Phil, 95 (36.5%) with Masters, and 62 (23.8%) with a PhD degree.

Table 1 - Lecturers' Professional Qualification
(results of author's review)

Obtained	Frequency	Percent
Master	95	36.5
MS / Phil	**100**	**38.5**
Doctorate	62	23.8
Other, degree	2	0.8
Other, diploma	1	0.4
Total	260	100.0

Based on the results in the Tab. 1 above, 95 (36.5%) lecturers had a master degree, 100 (38.5%) with master of Philosophy, and 62 (23.8%) with doctorate degree. Furthermore, 3(1.2%) of them had other degrees or diplomas. This result indicates that slightly more than half of the lecturers in Islamabad universities had master degree.

Tab. 2 shows the distribution of frequency and percentage of the scores for the latest professional qualification of instruction among lecturers in universities of Islamabad.

Based on the results in the Tab. 2, 141 (54.2%) lecturers received their last qualification in 2005-2010, 79 (30.4%) of them in 2000-2004, and 40 (15%) lecturers in 2000 and before. This result indicates that more than half of the respondents received their qualification in 2005 - 2010.

Table 2 - Year of Latest Professional Qualification of Lecturers
(results of author's review)

Year Obtained	Frequency	%
2005 – 2010	**141**	**54.2**
2000 – 2004	79	30.4
1995 – 1999	22	8.5
1990 – 1994	15	5.8
1989 and before	3	1.2
Total	260	100.0

Discussion

As for research question mentioned above, the role of professional qualification and the year of professional qualification of the instruction among lecturers towards ICT utilization, this study found that lecturers' qualification was significantly associated with aspects of ICT utilization such as use of Internet, technology enhanced and database.

This shows that the lecturers with high professional qualification were very good to use search engines and logical operators for information in their instruction. They were effectively practicing discussion, instructional strategies online, web-based meeting tools to facilitate instruction in universities of Islamabad.

The analysis indicated that a statistically significant positive correlation exists among the lecturers' qualifications and using of ICT in teaching, lecturers' use of internet at home and the overall ICT utilization among lecturers in order to facilitate the instruction through using different ICT tools and other internet websites.

This shows that those lecturers, who have high professional qualification, use ICT in teaching, use internet at home were good in using overall ICT in their instruction like search engines, logical operators for information in their instruction. They were effectively practicing discussion, instructional strategies online and web based meeting tools to facilitate instruction in universities of Islamabad.

The analyses also suggest that other factors, such as high cost of ICT tools and expenditure for ICT had affected the lecturers' ability to use new technologies in instruction in universities.

Statistically significant association was found in the lecturers' highest professional qualification. Literature review reflected a significance difference in the lecturers' qualifications in the studies of Al-Zahrani (2000). Statistically insignificant association was also determined among the ICT utilization in instruction among lecturers and their year of attaining professional qualification.

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