Application ICT for Training Teachers in the Teacher's Education Center: A Case Study in Iran, Tehran

Ali Akbar Khosravi[*1] and Nader Barzegar[2]

1. Islamic Azad University, Tehran Branch, Tehran, Iran

2. Department of Educational Management, Islamshar branch, Islamic Azad University, Islamshahr, Iran

* Corresponding author's Email: khosravi.edu@gamil.com

ABSTRACT: The present research was done to study the facilitates and equipment necessary for information and communication Technology (ICT) application in Tehran teachers education centres which was carried out by way of a field research. Research aim was feasibility application of Information and communication Technology for training teachers in Tehran teacher's education centres. To perform the research a questionnaire with a 43 researcher-made question was used which included 11 basic factors of using information and communication Technology conditions. The above mentioned questionnaire was presented to two sample groups of instructions and students teachers. The collected information was analyzed using "T-test" with two independent groups and to identical samples, respectively. The result show that both groups indicated that in using ICT, the following factors are very important: Educational system strategy, social supports, technology availability, technical supports, qualified instructors, contents indexes, teaching resource and their assessments. Also both groups believed that there is a meaningful difference between the importance of each of the factors (Ideal case) and satisfaction of the presence of each calculated effect size has high strength.

Keywords: Education, Teachers, Information, Communication, Technology.

ORIGINAL ARTICLE

INTRODUCTION

According to Bandele (2006), ICT is a revolution that involves the use of computers, internet and other tele-communication technology in every aspect of human endeavour. "Technology has now changed or altered how people access, gather, analyze, present, transmit, and simulate information. Today's technologies provide the tools, applications, and processes that empower individuals of our information society.

Similarly, the International Technology Education Association (ITEA) (2000) emphasized that technology is human innovation in action that involves the generation of knowledge and processes to develop systems that solve problems and extend human capabilities and the innovation, change, or modification of the natural environment to satisfy perceived human needs and wants.

The impact of technology is one of the most critical issues in education (Webber, 2003). Technology is the catalyst in the process of transforming traditional schools. In other words, technology is indispensable for the success of the schools in the information age. Technology is also needed to provide a bridge between teachers, students, parents and the community. New technologies are changing the teacher's role from information giver to facilitator, counsellor, advisor, guide, coach, co-learner, mentor, resource and technology managers, and mediator to the students (Jonassen et al., 1999). ICT change fundamentally the teacher's role, which goes beyond the traditional way of working. Teacher becomes

intermediate supporter in a facilitating direction of the student towards gaining knowledge (Vassilakis et al., 2006). These challenges ask teachers to continuously retrain themselves and acquire new knowledge and skills while maintaining their jobs (Carlson et al., 2002).

Information and communication technologies (ICTs) are a major factor in shaping the new global economy and producing rapid changes in society (UNESCO, 2002). One developing country that is currently pursuing the technological track in education is Iran. Iran intends to transform its educational system to get sustained, productivity growth, which will be achieved only with a technologically literate, critically thinking work force prepared to participate fully in the global economy of the 21st century (Jahangard, 2003).

According to Babajide et al. (2003), Bryers (2004), Bandele (2006) and Ofodu (2007), ICT include; radio, television, computers, overhead projectors, optical fibres, fax machines, CD-Rom, Internet, electronic notice board, slides, digital multimedia, video/VCD machine and so on. Grabe et al. (2001) stated that technology should facilitate meaningful learning in the classroom. According to Norum et al. (1999), technology not only change the way students learn but also the way teachers teach and administrators operate.

Also, Mooij et al. (2001) stated that teachers are the most critical "key person" in the implementation of ICT in the school. According to Albirini (2006a), successful implementation of educational

technologies depends on educators, who eventually determine how they are used in the classroom. Therefore, teachers need to be skilled and knowledgeable to effective implementation of ICT in teaching and learning (Williams et al., 2000). Hence, teachers who have positive perceptions about the cultural relevance of computer technology will apply ICT in education (Albirini, 2006b). Moreover, Otto et al. (2004) reported that although ICT are now widely available in schools, it does not integrate into teaching and learning. According to the policy document ICT integration in teacher education aims to enable teachers to realize the following objectives among other things: (I) integrate the use of ICT to achieve educational objectives, (ii) facilitate the use of ICT resources in schools and (iii) facilitate development and use of ICT as a pedagogical tool for teaching and learning (Nihuka, 2004).

Literature demonstrates that when used pedagogically, Information and Communication Technology have the potential to address most of the educational challenges (Dunn et al., 2004; Dunn, 2004; Malikowski et al., 2006; Malikowski, et al., 2006; Papastergious, 2006). According to Zhao (2003) a particular ICT-related teacher education program or course must seek to promote the following aspects of knowledge so as to help students-teachers know how to use technology in the teaching and learning processes: (i) knowledge of problems or situations that can be solved by technology, (ii) knowledge of the kind of technology that can solve this kind of problem and (iii) knowledge of how the technology can solve a specified problem.

Thus recently, the use of ICT is becoming recommended for school education and there are some reports of teacher training courses to improve teachers' skills in using IT effectively (Hotta et al., 2006).

Present research has been evaluating the facilities and requires materials for utilizing ICT In teacher's education centres. Also on closer examination, the component interest rate such as: education policy, social support, access to technology, technical assistance, qualified teachers, standard content and resource curriculum, learning-centred education, professional development, continuous evaluation and cultural contexts, are considered as a basic condition for using ICT in teachers education centres.

Research hypothesis:

4-1) is there any difference between using ICT (ideal condition) and the interest rate of it (status quo) with respect to the eleven components of teacher's education centres?

4-2) is there any difference between, teachers and students, about using ICT (ideal condition) with respect to the outlined components, in teacher's education centres?

MATERIALS AND METHODS

The research method is descriptive. Population of this research is all of the professors and students who were in nine teacher education centres of Tehran. And the simple random sample (118 professors, 327 students) has been selected by Morgan table. The data were collected from a questionnaire that involves 43 questions, In order to cover 11 major components of using ICT.

RESULTS

In order to analyse the data the research questions, descriptive and inferential statistics were used. We used central tendency index and description in description, and the T-test of two matched samples, in inferential. In order to compare the importance and satisfaction of using eleven components of ICT and T-test, and also to compare between teachers and students view about using eleven components of ICT. The results are shown in table 1 and 2.

As the result has shown in table1, there is a significant difference between the ideal condition (using ICT) and the status quo (satisfaction rate) of using the eleven components of ICT from the participants view, it means, they has a little attention to the present situation.

According to the result and the T-test value that obtain from table 2, there is no significant difference between professors and students view about using ICT (ideal condition), and both groups have considered the issue very important.

DISCUSSION

Teacher's education centres can be a good complement for teaching and learning in universities and institutions. To accomplish this, the use of ICT for training the professional professors is essential. The research findings has shown, using ICT in teacher education centres and focusing on the eleven components is every important, but the present situation should be considered seriously, because it has no quality and utility. Doing these steps such as: making strong policy, government, people, and education management support-continuous monitoring and control- funding and facilities-equipped training centres with multi-media (information networks, etc.) employing professional professors- flexible learning opportunities for learners and make appropriate opportunity for using ICT in teacher education centres, is essential.

Table 1. Comparison of T-test match samples and measures the satisfaction of using the eleven components of ICT

Measured components	Possibility	Critical value	DF	T value	EF
Applying ICT policies	0.000	1.96	442	33.05	0.84
Social support for applying ICT	0.000	1.96	442	30.01	0.81
Technology access for using ICT	0.000	1.96	442	28.536	0.80
Technical assistance for using ICT	0.000	1.96	442	30.365	0.82
Skilled teachers for using ICT	0.000	1.96	442	27.869	0.89
Standard contents and curriculum resources for using ICT	0.000	1.96	442	28.113	0.80
Learning-centred for using ICT	0.000	1.96	442	28.392	0.80
Professional development for using ICT	0.000	1.96	442	30.39	0.82
Continuous evaluation for using ICT	0.000	1.96	442	25.533	0.77
Integrated vision of using ICT	0.000	1.96	442	24.704	0.74
Ideal cultural context for using ICT	0.000	1.96	442	23.155	0.76

Table 2. T-test compared between teachers and students view about using the eleven components of ICT (ideal condition)

Measured components	possibility	Critical value	Degrees of freedom	T value
Applying ICT policies	0.595	1.96	441	0.532
Social support for applying ICT	0.213	1.96	441	1.246
Technology access for using ICT	0.175	1.96	441	1.359
Technical assistance for using ICT	0.162	1.96	441	1.401
Skilled teachers for using ICT	0.589	1.96	441	0.541
Standard contents and curriculum resources for using ICT	0.927	1.96	441	0.091
Learning-centred for using ICT	0.952	1.96	441	0.61
Professional development for using ICT	0.268	1.96	441	1.108
Continuous evaluation for using ICT	0.685	1.96	441	0.406
Integrated vision of using ICT	0.339	1.96	441	0.957
Ideal cultural context for using ICT	0.159	1.96	441	1.412

REFERENCES

Albirini A. (2006a). 'Teachers' attitudes toward information and communication Technologies', Journal of Computer& Education, 47, 373-398.

Albirini, A. (2006b). Cultural perceptions: The missing element in the implementation of ICT in developing countries' International Journal of Education and Development using Information and Communication Technology (IJEDICT), 2:1, 49-65.

Babajide, V.F.T., & Bolaji O.A. (2003). Perception of lecturers and service teachers towards the use of communication media in teaching pure and applied science related discipline. 44th Annual STAN Conference proceedings pp. 33 – 36.

Bandele, S.O. (2006). Development of modern ICT and internet system. In Agagu AA (ed). Information and communication technology and computer Applications. Abuja: Panof Press pp. 1– 3.

Bryers, A.P. (2004). Psychological evaluation by means of an on-line computer. Behaviour Research Method and Instruction 13: 585 –587.

Carlson, S., & Gadio, C.T. (2002). Teacher professional development in the use of technology. In W.D. Haddad & A. Draxler (Eds.), Technologies for education: potential, parameters, and prospects, Paris and Washington, D.C.: UNESCO and AED, retrieved April 25, 2005, http://www.schoolnetafrica.net/fileadmin/resources/Teacher_Professional_Development_In_the_use_of_Technology.pdf.

Dunn, T.K. (2004). The interplay between a course management system and pre-service teachers' knowledge, beliefs and instructional practices. The Journal of Interactive Online Learning, 2(3), 1-7.

Dunn, D.L., & Linger felt, D. (2004). Integrating Web CT into the computer science curriculum.JCSC, 19(4), 335-341.

Grabe, M., & Grabe, C., (2001). Integrating technology for meaningful learning, Houghton Muffin Company. USA.

International Technology Education Association (ITEA) (2000). 'Standards for technological literacy: Content for the study of technology'. Retrieved December17, 2005, from: http://www.iteaconnect.org/TAA/Publications/TAA_Publications.html

Jahangard, N. (2003). 'The Goals of Educations in the information Era', TAKFA Magazine, 10January p.5-6.

Jonassen, D.H., Peck, K.L., & Wilson, B.G. (1999) Learning with technology: a constructivist perspective, Upper Saddle River, NJ: Prentice Hall.

Kaneori Y. & Muramatsu H. (2006). Development and Evaluation of a Teacher Training Program of "the information and communication network" which I Employed a Workshop Into, Japan Journal of Educational Technology, vol.30 (Suppl.), 189-192 [in Japanese].

See, J. (1994). 'Technology and outcome-based education: Connections in concept and practice' The Computing Teacher, 17: 3, 30-31.

Malikowski, S.R., & Theis, J.G. (2006). Distance education courses: How course management systems are used and factors affecting use. Paper presented during the 22nd Annual Conference on Distance Teaching and Learning.

Malikowski, S.R., Thompson, M.E., & Theis, J.G. (2006). External factors associated with adopting a course management system in residential college courses. Internet and Higher Education, 9(2006), 163-174.

Mooij, T. & Smeets, G. (2001). Modelling and Supporting ICT implementation in Secondary Schools', Journal of Computers and Education , 36, 265-81.

Nihuka A.K. (2000). ICT in Teacher Education: An Analysis of Education Media and Technology Instructional Material of the Open University of Tanzania. Open University of Tanzania, Dar es salaam-Tanzania. (Lecturer).

Norum, K., Grabinder, S & Duffield, J. (1999). 'Healing the universe is an inside job: Teachers'view on integrating technology' Technology and Teacher Education 7:3, 187-203.

Otto, T.L., & Albion, P.R. (2004). Principals' Beliefs about Teaching with ICT', paper presented at International Conference of the Society for Information Technology and Teacher Education, March, Atlanta, Georgia.

Papastergious, M. (2006). Course management systems as tools for the creation of online learning environments: Evaluation from a social constructivist perspective and implications for their design. International Journal on E-learning 5(4), 593-622.

UNESCO. (2002). Information and Communication Technologies in Teacher Education. A planning Guide.

Vassilakis, K., & Kalogiannakis, M. (Eds.). (2006). Distance-learning education approaches in institutions of tertiary education. Athens, Atrapos (in Greek. Fulltext.pdf-

Webber, C. (2003) 'Introduction New technologies and educative leadership', Journal of Educational Administration, 41: 2,119-123

Williams, Coles, L., Wilson, K., R. & Tuson, J. (2000). 'Teachers & ICT: current use and future needs', British Journal of Educational Technology, 31:4, 307-320.

Zhao, F. (2003). Enhancing the Quality OF on line higher education through Measurement .In Quality Assurance in Education.11 (4).214-221.