

BARRIERS TO THE EFFECTIVE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN DISTANCE EDUCATION

Shakil Ahmad Ghazi*, Dr. Amtul Hafeez, M. Safdar*****

*PhD Scholar, Faculty of Education, Preston University, Islamabad, Pakistan

**Lecturer, Faculty of Education, Allama Iqbal Open University, Islamabad, Pakistan

***PhD Scholar, Department of Education, International Islamic University, Islamabad, Pakistan

ABSTRACT

Information and communication technologies (ICTs) have revolutionized all aspects of human life on this planet and these have created unprecedented challenges and unparalleled opportunities for advancement on this globe. Teachers are leaders and nation builders, hence, prepare generations to meet the accelerating challenges created by ICTs. The study focused upon the problems and issues pertaining to the effective use of ICTs in teacher training in distance education.

The study was descriptive in nature therefore, survey was considered appropriate for data collection. A sample of 50 teachers and 200 students of BEd, MEd and MA Education were taken randomly in 2012. Data were collected via a questionnaire and top 10 barriers were solicited from the respective respondents. Data were analyzed qualitatively and quantitatively as well. The results of the study arrayed lack of training, power failure, lack of technical support, Lack of peer support, slow connectivity, lack of quality software, lack of quality hardware, lack of software, lack of knowledge and lack of confidence as top 10 barriers among tutors. Sequence was changed among students as lack of hardware, power failure, lack of quality hardware, lack of software, lack of quality software, lack of training, lack of technical support, lack of peer support, slow connectivity, and lack of confidence were arrayed as top 10 barriers/problems. Conclusions and recommendations were made in the light of findings.

Key words: Distance Education, Teacher Training, ICTs, Barriers

INTRODUCTION

Education has got paramount importance in the 21st century due to emergence of globalization and increasing global competition. Doubtless to say that in this fast changing and competitive world, education and technology are the master keys for respectable survival, growth and development. ICTs have played vital role in the advancement of teachers' professional development throughout the world and these are helpful for continuing professional development of teachers. The current and emerging communication and information technologies provide unique opportunities to continue the professional development of teachers and other educators. (UNESCO, 2005)

National Education Policy 1998-2010 (1998, p.88) has given special emphasis for the integration of ICTs in education in these words, "The investment in information technology infrastructure and its network will bring our institutions of higher education on the world map".

ICTs can play a vital role in the professional development of teachers and administrators, consequently in enhancing quality of education. To improve education in Pakistan, the needs of our teachers, head teachers, and administrators must be addressed holistically. ICT can enhance teaching quality by supporting and reinforcing the use of innovative teaching practices. It can allow educators to access a wide array of materials, reducing isolation and permitting peer-exchanges (GOP, 2003).

TEACHERS PROFESSIONAL DEVELOPMENT AND ICTs

In this information era technological skills are essential for teachers' professional development. These skills are essential for every teacher training programme because other skills can be enhanced through the usage of information and communication technologies. Teachers have not to attain only basic skills of ICTs for individual development but they should also acquire these skills for daily life requirements of students. It is not only necessary to know the basic principles of ICTs and the use of ICTs for personal development but also to cope with the daily life contexts of students and teachers. Following skills are necessary for teachers in this era:

- It is necessary for all teachers to be able to use ICT for their own purposes and to help students to use ICT.
- Word processing is necessary for teachers in all subjects as it is helpful to make documents (e.g. letters, tests and assignments).
- Spreadsheets are very useful for many teaching and personal uses: preparing class lists and mark sheets etc.
- Most information systems in use today (e.g. school administration) are based on the principles of databases, and so an understanding of databases is useful for teachers.
- Using emails and searching for information on the Internet is important for teachers.
- Teachers in all subjects need to be role models with respect to ICT issues.
- It is a part of a teacher's professional development and attitude to know about changes with respect to ICT in the profession. ”. (UNESCO 2005)

ICTs are not only beneficial during teaching learning process but also empower teachers by enhancing their competencies and administrators in effective management and administration. The Beijing Declaration of the E-9 Project on ICT and EFA (August 2001) reiterated its commitment to raise the quality of education through using Information Communication Technology (ICT) and better training of teachers and administrators (UNESCO 2003) . ICTs based programmes are very interesting and motivating for the learners as they are engaged in these programmes keenly. These programmes facilitate them in the acquisition of basic skills which ultimately increase the quality of teacher training programmes. ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training (UNDP-APDIP, 2002).

BARRIERS TO THE UPTAKE OF ICTs BY TEACHERS

There are several barriers in the proper use of ICTs and their nature varies from area to area for example lack of availability of paraphernalia is the major problem in developing countries while level of their use is the key concern for developed countries. Nevertheless

key problems are lack of hardware, lack of quality of hardware, lack of training, lack of software, lack of quality of software, lack of technical support, lack of peer support, lack of time, lack of organization, lack of confidence lack of funding, connectivity problem and power failure etc. (BECTA, 2004)

Regarding personal computers (PCs) there are many people especially the students who cannot easily purchase the computer and its related accessories. No doubt designing and implementing successful teacher professional development programmes which employ ICT is neither easy nor inexpensive. (Carlson and Gadio (2002)

In some researches it is found that in pre-service phase some teachers feel frustrated during the use of these ICTs. Beggs (2000) pointed out that new technologies, when first encountered, bring mixed feelings of anxiety, fear, as well as frustration, which sometimes lead to not using the new technologies. I have observed similar reactions among tutors in the teacher training colleges, where the training of tutors did not fully materialize because the trained tutors who were expected to train others were not knowledgeable enough to competently train others. Studies in the UK identified three main obstacles that limited ICT uptake by student teachers: student access to computers, the ICT policy adopted by initial teacher training providers as well as lack of encouragement for students to use ICT in teaching practices (Murphy 2000).

A recent study in Singapore (Teo, 2006), based on the observations of ICT-mediated lessons and face-to-face interviews with teachers, ICT heads-of-department and school principals, identified six major barriers to teacher ICT-integration: (a) inadequate appointment of technical support staff, (b) inadequate appointment and training of student ICT helpers, (c) lack of sufficient time for teachers to prepare for ICT-mediated lessons, (d) insufficient collaboration among teachers in preparing ICT-mediated lessons, (e) lack of support provided by school leaders in addressing teachers' ICT concerns, and (f) insufficient training, demonstrations or advice for teachers on how to incorporate ICT into classroom instruction.

OBJECTIVES OF THE STUDY

The study sought to achieve the following main objectives:

- To explore the current utilization of ICTs in teacher training institutions of Pakistan.
- To evaluate the role of ICTs in teachers' professional development.
- To investigate the problems in the use of ICTs in teacher training institutions of Pakistan.

RESEARCH METHODOLOGY

Population and Sampling

The population of the study consisted on Institutes of Education and Research (IERS) and Departments of Education in public sector universities of Pakistan. The sample of the study consisted on 50 academicians and 300 students of B.Ed, M.Ed, MA Education, and MS leading to PhD Education drawn through stratified random sampling technique.

Instruments and Their Development

Keeping in view the nature of the problem, descriptive i.e. survey type study was carried out to collect the data. Therefore, to elicit the opinion of the respective respondents, two questionnaires were constructed:

- Questionnaire for Students
- Questionnaire for /Teachers/academicians

All the statements of the questionnaire were close-ended except the last one, so that respondents could write a free response in his/her own words.

Validation of the Questionnaires

Questionnaires were pilot tested on 25 students and 5 academicians. After incorporating observations given by the students and academicians, the questionnaires were finalized.

Administration of Research Tool

After finalizing, the questionnaires were administered through prepaid postage and e-mail to the respective respondents but where applicable these were personally handed over to the respective respondents. 37 out of 50 from academicians and 191 out of 300 from students were returned back.

Data Analysis

The data collected through questionnaires were analyzed by using mean and percentage formulas.

Table: 1

Utilization of ICTs

S.No	Item	Respondents	Always		Often		Seldom		Never	
			N	%	N	%	N	%	N	%
1	Reading and sending e-mails	Teachers	21	38	28	50	07	12	---	---
		Students	67	22	106	35	84	27	39	13
2	Writing documents (Word processing)	Teachers	19	34	33	59	04	07	---	---
		Students	49	16	151	49	65	21	26	08
3	Creating Spreadsheets (excel etc.)	Teachers	---	---	10	18	32	57	14	25
		Students	---	---	---	---	98	32	153	50
4	Creating presentations (PowerPoint)	Teachers	07	12	28	56	16	29	05	09
		Students	---	---	23	08	119	39	158	52
		Teachers	24	43	27	48	05	09	---	---

5	Online /digital library	Students	65	21	106	35	77	25	52	17
---	-------------------------	----------	----	----	-----	----	----	----	----	----

It is evident from table: 1 that teachers are most fluent in the use e-mails as more than 80% teachers are creating, reading or sending e-mails often and always. While more than 57% students are also using their e-mails often and always. Anyhow 27% students are rare user of e-mails and it is a matter of concern that about 13% students have never used e-mails. Similarly more than 90% teachers are using word processing frequently. Students are slightly less inclined (65%) towards the use of Microsoft Word. Exercise of spreadsheets (MS Excel) is not up to satisfactory level among teachers as 18% teachers are frequently using this technology and 57% are using this technology rarely. Perhaps teachers use MS Excel only during the preparation of result. This practice is very poor among students as none of the students use this technology frequently and only 32% students use this technology rarely. Teachers are fluent in creating and presenting their lectures through power Point while as more than 68% teachers are frequently using MS Power Point. Students are less inclined towards the use of MS Power Point as only 8% are frequent user and more than 50% have never used this technology. Both teachers (more than 90%) and students (56%) are fluent user of online/digital library.

In ranking of teachers' frequent utilization of these technologies, sequence was;

1. Use of word processing (93%)
2. Use of online/digital library (91%)
3. Use of e-mails (88%)
4. Use of Power Point (68%) and
5. Use of spread sheets (only 18%)

While ranking regarding the frequent use of these ICTs among students was;

1. Use of word processing (65%)
2. Use of e-mails (57%)
3. Use of online/digital library (56%)
4. Use of Power Point (8%) and
5. Use of spread sheets (not frequent user)

Table: 2

Barriers in the utilization of ICTs

S. No	Item	Respondents	SA	A	UN C	DA	SD A
6	Lack of hardware	Academicians	11	23	2	--	--
		Students	95	91	2	--	--
7	Lack of Quality hardware	Academician	11	21	3	--	--
		Students	76	103	5	6	--
8	Lack of training	Academicians	21	16	--	--	--
		Students	128	57	3	--	--
9	Lack of software	Academicians	16	17	4	--	--

		Students	91	87	6	2	--
10	Lack of quality software	Academicians	17	18	2	--	--
		Students	67	51	46	28	--
11	Lack of technical support	Academicians	12	23	--	--	--
		Students	114	61	14	--	--
12	Lack of peer support	Academicians	6	21	7	2	--
		Students	36	126	18	1	--
13	Lack of time	Academicians	7	6	9	8	7
		Students	35	32	68	27	25
14	Limited lab hours	Academicians	13	17	5	1	1
		Students	49	83	17	31	4
15	Lack of organization/ administration	Academicians	2	7	10	12	6
		Students	51	65	34	37	3
16	Lack of realization of advantages	Academicians	2	6	11	13	5
		Students	43	52	47	38	--
17	Lack of confidence	Academicians	3	7	11	13	2
		Students	102	47	25	13	1
18	Power failure	Academicians	23	7	5	2	--
		Students	111	37	31	4	--

It is evident from table: 5 that dominant majority of both academicians and students (more than 95%) are of the view that lack of hardware and quality hardware is the major problem in the use of these ICTs. Likewise dominant majority of both academicians and students (more than 80%) are agreed that lack of software, quality software, technical support, peer support, limited time of computer labs and power failure are the barriers to uptake these ICTs. Students are of the view that lack of organization is also a problem (61%) while academicians are of the view that this is not an important problem (49%). While 100% academicians and 97% students agreed with the statement that lack of training is the key problem for them.

CONCLUSION

Use of ICTs is an effective pedagogical tool and doubtless to say that in this IT era it is imperative for teachers to use ICTs. ICTs play critical role in enhancing knowledge competency, making teaching learning process more effective and enhancing teaching skills is positive. The most common uses of ICTs among teachers and students in teacher training institutions are; e-mailing word processing, online library, academic studies and getting latest news while use of spreadsheets (excel) is unsatisfactory among both teachers and students. lack of training, lack of technical support, Lack of peer support, slow connectivity, power failure, lack of quality software, lack of quality hardware, lack of software, lack of knowledge and lack of confidence as top 10 barriers among teachers. Sequence was changed among students as lack of hardware, lack of quality hardware, lack of software, lack of quality software, lack of training, lack of technical support, lack of peer support, slow connectivity, power failure and lack of confidence were arrayed as top 10 barriers/problems.

A more holistic approach may be used for the training of both groups. Emphasis may be given on the maximum deployment of computers and internet so that optimum benefits may be achieved to meet the challenges of 21st century.

REFERENCES

- ACDE (2005) Teaching Tomorrow's Teachers: Canberra. Retrieved December 25, 2007, from www.ecde.edu.au.
- ADB (2001) ICT and Education –Policy Strategy and Further Progress. Retrieved December 25, 2007, from www.adb.edu.
- ADBI (2004) Increasing Stakeholders Participation Using ICT: Report of the Regional Workshop.
- Allama Iqbal Open University (2005), *Vice Chancellor Report 2006*. Nazco Press: Rawalpindi.
- Amina, S. (2006) Accessing Electronic Information: A Study of Pakistan Digital Library. Oxford.
- Balanskat,A., Blamire,R. and Kefala,S. (2006) The ICT Impact Report.
- Becta (2004) A Review of the Reserch Literature on Barriers to thje uptake of ICTby Teachers, UK: Retrieved December 25, 2007, from www.ecde.edu.au.
- Chochran,S.M. (2006) Policy, Practice and Politics in teacher Education. Editorial from the Journal of Teacher Education. California: Ajoint publication of Crown Press. Asage Publication Company and Serving Leader Thousand Oaks.p.XIIV.
- Davidson College (USA) (2008). *Licensure in Education*. Retrieved on July 25, 2008 from www.davidson.edu .
- European Commission (2002) *European Report on Quality Indicators of Lifelong Learning*. Brussels. Directorate General for Education.
- Fulton,K., Glenn, D. and Valdez,G. (2004) Teacher education and Technology Planning Guide. Learning Point. New Delhi.
- Government of Pakistan (2003) National Information and Communication Technology Strategy for Education in Pakistan, Islamabad.
- Government of Pakistan (2004) The Development of Education, National Report of Pakistan. Islamabad: Ministry of Education.
- Government of Pakistan (2006) Situation Analysis of Teacher Education in Pakistan; Towards a Strategic Framework for Teacher Educaiton and Professional Development.

- Government of Pakistan (2007) Education in Pakistan: A White Paper. Islamabad. Ministry of Education.
- HEC (2005) Medium Term Development Framework 2005-10, Islamabad.
- Jumani, N.B. (2005) Competency Based Teaching: Pakistan Journal of Education , vol.xxii, Issue-1,2005. Islamabad. Allama Iqbal Open University.
- Killen,R.(2003) Effective Teaching Strategies: Lessons from Research and Practice.Australia:Social sciences press.
- Marsh, C. (1997). Handbook for *Begning teachers*. Australia: Longman.
- Mcmillan , K.C. (2003) A Retrospective on Twenty Years of Education Technology Policy.
- Mussarat, A.S. (2004) Teaching Competencies and Educational Technology, Study Guide of M.Ed.(829) Teacher Education in Pakistan. Allama Iqbal Open University. Ivy Printers Rawalpindi.
- Siddiqui,A.H. (2004) Teacher Education in Pakistan. A Study Guide of M.Ed course, Allama Iqbal Open University, Islamabad.
- Smith,G., Ewing,R. and Cornu,R.(2003)Teaching: Challenges and Dillemmas.Australia:Thomson.
- Trucano,M.(2005) Knowledge Maps: ICTs in Education. Washington.IfoDev.
- UNDP-APDIP (2002) ICT in Education, New York.
- UNESCO (2000) *Information and Communication Technologies in Teacher Education: A Planning Guide* Retrieved December 5, 2007, from www.unesco.org.
- UNESCO (2000) *The Main Thrusts of UNESCO'S Activities in Higher Education*.
- UNESCO (2002) *Open and Distance Learning: Trends, Policy and Strategy Considerations*. France.
- UNESCO (2003) *Meta-Survey on the use of Technologies in Education in Asia and Pacific* Bangkok. Farrell, G. and Wachholz, C.
- UNESCO (2003) *Higher Education in Asia and the Pacific (1998-2003)*, paris.
- UNESCO (2003) *Status of Teachers in Pakistan*. Islamabad. Dr. Mussarat Anwar Sheikh and Dr. Muhammad Zafar Iqbal.
- UNESCO (2003) *Quality of Primary Education in Pakistan*. Retrieved December 7, 2007, from www.unesco.org.

UNESCO (2004) *Higher Education in Globalized Society*. Retrieved December 29, 2007, from www.unesco.org.

UNESCO (2004) *Information and Communication in Education : A Curriculum for School and Programme of Teacher Development*. Retrieved December 7, 2007, from www.unesco.org.

UNESCO (2005) *A Study on the Best Practices in ICT Based Education in Pakistan*. Islamabad . Zafar, I.M.

UNESCO (2005) *Information and Communication Technologies in Schools: A Handbook for Teachers*. Retrieved December 15, 2007, from www.unesco.org

UNESCO (2005) *Innovative and Good Practices of Open and Distance Learning in Asia and Pacific*. Bangkok. Insungjung.

UNESCO (2007) *ICT in Education in the Asia Pacific Region: Progress and Plan*. Bangkok.

UNESCO (2008) *ICT Competency Standards for Teachers*. Retrieved December 15, 2007, from <http://www.unesco.org.edu>.

Williams, D. et al. (2000) Teachers and ICT: Current Use and Future Needs. *British Journal of Education Technology*. Vol, 31. 307-320.

World Bank (2006) *Higher Education Policy Note: Pakistan. An Assessment of Medium Term Framework*.

Yackulic, R.A. and Noonan, B.W. (2001) *Quality Indicators for Teacher Training in Canada*. Quebec City.

Zafar, I.M. (2002). *Trends and Issues in Teacher Education. A Study Guide of*