

ICT in Teacher's Education: Needs and Expectation

Mr. Debasis Mahapatra

Asst. Prof and Head, Teacher's Education Department, Seth Phool Chand Agrawal Smriti College,
Nawapara (Raipur) C.G. 493881

Author's Email ID: mahapatra.debasis007@gmail.com

Abstract: The objective of the study was to investigate the internet competencies of teacher trainees with regards to use of ICT, internet browsing, along with awareness about ICT among male and female teacher trainees. Samples of 77 teacher trainees from Teacher's Education Department of Seth Phool Chand Agrawal Smriti College, Nawapara – Raipur (C.G.) were selected randomly. A questionnaire and achievement test was constructed on the use of ICT and Internet use for teacher trainees. A practical programme schedule of 30 days which include group activities, cyber café visits, and chart preparation on different topics related to syllabus was designed for them for collection of data. Statistical analysis using percentage revealed that i) below the average numbers of male and female teacher trainees used computer and internet at home and cyber cafe, whereas a few numbers of male and female teacher trainees used computer and internet at college with having the knowledge about power point and excel; and used LCD projector for lesson delivering; and ii) after practical programme schedule of 30 days Cent percent of the teacher trainees were using computer and internet; above the average numbers of teacher trainee from both male and female can search engines; create email for their own; started making power point presentations; used the LCD projector; use excel to prepare graph.

Keywords: Internet competencies and awareness about ICT of male and female teacher trainees.

1. INTRODUCTION

Research studies conducted in the area of ICT in Teacher's Education emphasized that the importance of training for the adoption and diffusion of computers in schools (Dalton, 1989); constructivist teaching with internet (El-Hindi, 1998); factors effecting teachers' adoption of technology in secondary schools (Mumtaz, 2000); lack of administrative, technical and financial support as the problems that prevent teachers from using computers in their teaching (Mumtaz, 2000); attitude towards educational technology among B.Ed. students on the basis of their gender (Vijayarani, K., 2005); use of internet in teacher education (Goel, 2006); integration of ICT into teacher education (Devananthan, 2008); internet awareness and competency among high school students and teachers (Swamy, 2010). The present study was designed to investigate the internet competencies of teacher trainees with regards to use of ICT, internet browsing, along with awareness about ICT among male and female teacher trainees.

2. ICT FOR TEACHER TRAINING IN THE WORLD

In the USA, teacher -training institutions addressed professional development in technology through in-service training programs. But problem was there that they need for improvement in the use of ICT, rather than provision of ICT. ICT in teacher education have been developed by the International Society for Technology in Education (ISTE) and adopted by the National Council for Accreditation of Teacher Education (NCATE). The International Society for Technology in Education (ISTE) recognizes that educational computing and technology foundations are essential for all teachers. This is why; ISTE has created the National Educational Technology Standards (NETS). The NETS will work for define standards of students, integrating curriculum technology, technological support, and student assessment and evaluation. In the USA a competencies standard for teachers was: Pre-requisite Technical Skills, Technical Skills, Instructional Uses, and

Teachers' Professional Roles (Moore et al.; 1999). In European countries, ICT has become a compulsory part of the curriculum for training of teachers of both primary and secondary school (Balcon, 2003). In Germany, Italy and Bulgaria, ICT is a core curriculum options in teacher training courses. The institutions of teacher education concerned are obliged to offer the subject, but it is left to the trainees to decide whether or not to include it in their overall course of education. This applies to the initial education of primary and secondary school teachers (Eurydice, 2004). Among the most developed countries only UK includes IT into its National Curriculum, and having at least one computer in all of its primary schools with best pupil computer ratio in secondary schools. However, professional development of teacher for using ICT in teaching and learning is surprisingly still low. It can be seen that pre-service teacher training in UK became a competency based model in recent years with focusing on core skills (Denning & Selinger, 1999). In Belgium and Norway, ICT are compulsory but their content is an integral part of other subject's courses (Eurydice, 2001). Case studies highlighted on importance of ICT in teacher education programmes in the Asia Pacific region showed that teachers and schools were facing a range of challenges, including infrastructural issues likes lack of power, telephone and Internet, which hinder the effective use of ICT in teaching and learning. Due to a lack of professional development schools were facing problems in using ICT. Somehow teachers have developed basic computer skills but have not yet become confident in using technology to improve their pedagogy. Schools and teachers were struggling at their roles and responsibilities concerning to new education system. Even they are not clear about the support that they can expect from the government (UNESCO, 2007).

3. EMERGING ICT TECHNOLOGY IN THE CLASSROOM

The technologies used at present in the classroom across the globe are Web 2.0 tools, blog, social networking, Wiki, rich site summary, podcasting, and filters. Web 2.0 is not a new version of the internet or Windows Explorer that have to be downloaded. Instead, this refers to the way the internet tends to work these days. Now, the web, unlike internet, is a place where one can read and write bits and pieces, and other members can write and post their opinions on a given topic. Blog is short form for web log. This is a publicly available online dairy where somebody can post short articles (opinions, information, events etc.) on a regular basis (daily, weekly, fortnightly, etc). It is used as a classroom technology by teachers to have his/her own blog that students can read, and the teacher can post advice, study tips, homework reminders etc. For example, Google applications give facility to create blog for users. Social networking sites help users to connect and converse privately or publicly to others. People can chat via the keyboard, post links to sites they recommend, find people with common interests, and so forth. Delicious, twitter, and face book are some examples of the basic social networking sites. Wiki refers to a website that anybody can edit. Wiki means, what I know is. It has some strong requirements and standards relating to distinguish opinions from facts, unbiased writing and supporting references. Rich site summary (RSS) is a quick summary of new material that has been added to a site of interest to the subscribers. In the world of classroom technology, an RSS is sent to the subscribers (i.e. students) who can see the headlines of any newsletters posted online. Podcasting is an audio and video clips that can be posted for viewing or listening on iPods (which are like the walkman but much more sophisticated). Clips can be distributed to subscribers through RSS. Familiar pieces of classroom technology such as digital cameras are used to create these. Filter is essential for any school computer that has internet access. A filter blocks undesirable sites so that students cannot access them. Though it is not Cent percent perfect, because sometime it is over blocked and dodged, so teachers needs to stay vigilant.

There are many kinds of computer and non-computer technologies used currently in traditional classrooms. These are computer, class websites, class blogs and wiki, wireless classroom microphones, mobile devices, and smart board. Computer in the classroom is an asset to any teacher. Teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new websites with a computer in the classroom. Class websites is a web page designed for teachers to post homework assignments, student work and famous quotes. Currently, children know how to use the computer and navigate their way through a website. Class Blogs and wikis are the variety of Web 2.0 tools, which are being implemented in classroom. Blogs allows students to maintain a running dialogue on a thought, idea, and assignment so that students get opportunity to comment and reflect. Wikis are more group focused. It allows group members to edit document and create new document. A wireless classroom microphone helps students to listen to their teachers clearer in noisy classrooms. Children learn better, when they listen t the teacher clearly. Mobile devices such as smart phone can be used to enhance the experience in the classroom by providing the possibility for teachers to get feedback. Smart Board (interactive whiteboard) provides touch control of computer applications. It enhances the experience of classroom situation by showing data and information that can be on a computer screen. This is not a visual learning, but it is interactive so that students can draw, write, or manipulate images on the Smart Board.

There are many other tools being utilized depending on the local school committee and availability of fund. These are TV, digital camera, video camera, LCD projector, OHP, tape recorder, CD/DVD player, MP3 player, etc.

4. OBJECTIVES OF THE STUDY

The study was the following objectives to measure:

1. To study the internet competencies of the teacher trainees.
2. To train them in the use of ICT and internet for browsing literature.
3. To study the level of awareness about ICT among male and female teacher trainees.

Sample

A sample of 77 teacher trainees from Teacher's Education Department of Seth Phool Chand Agrawal Smriti College, Nawapara – Raipur (C.G.) was selected for the present study.

Tools and Techniques used

A questionnaire and achievement test was constructed on the use of ICT and Internet for teacher trainees. An interview schedule was used to interview the teacher trainees. A practical programme schedule of 30 days which include group activities, cyber café visits, and chart preparation on different topics related to syllabus was designed for them. For analysis of data, the investigator used percentage analysis.

5. RESULTS

Table 1: ICT competencies of the teacher trainees

SL NO	ITEMS	TEACHER TRAINEES (MALE) N= 22				TEACHER TRAINEES (FEMALE) N= 55			
		YES	%	NO	%	YES	%	NO	%
1	Do you know about computer?	10	45.45%	12	54.54%	23	41.81%	32	58.18%
2	Do you use computer and internet at home?	10	45.45%	12	54.54%	15	27.27%	40	72.72%
3	Do you use computer and internet at college?	8	36.36%	14	63.63%	10	18.18%	45	81.81%
4	Do you use computer and internet at cyber café?	10	45.45%	12	54.54%	15	27.27%	40	72.72%
5	Do you know about Internet?	22	100%	0		55	100%	0	
6	Do you know search engines?	10	45.45%	12	54.54%	15	27.27%	40	72.72%
7	Have you created your own Email Id?	10	45.45%	12	54.54%	15	27.27%	40	72.72%
8	Have you search literature through internet?	10	45.45%	12	54.54%	15	27.27%	40	72.72%
9	Do you prepare power point presentation?	8	36.36%	14	63.63%	10	18.18%	45	81.81%
10	Can you prepare graph from MS Excel?	8	36.36%	14	63.63%	5	09.09%	50	90.90%
11	Have you used LCD projector for lesson delivering?	5	22.72%	17	77.27%	5	09.09%	50	90.90%

Table 1 shows significant difference between the theoretical and application awareness in the concept of ICT among male and female teacher trainees. Further the table shows that 45.45% male and 27.27% female teacher trainees used computer and internet at home and cyber cafe, whereas 36.36% male and 18.18% female teacher trainees used computer and internet at college. It is observed that 36.36% male and 18.18% female teacher trainees having the knowledge about power point and excel. A few i.e. 22.72% male and 09.09% female teacher trainees used LCD projector for lesson delivering.

Table 2: Awareness of ICT among male and female teacher trainees after programme

SL NO	ITEMS	After 30 days programme Teacher Trainees (MALE) N= 22				After 30 days programme Teacher Trainees (FEMALE) N= 55			
		YES	%	NO	%	YES	%	NO	%
1	Can you use computer and internet?	22	100%	0	0%	55	100%	0	0
2	Can you use search engines?	18	81.81%	4	18.18%	45	81.81%	10	18.18%
3	Can you create your own Email Id?	22	100%	0	0%	50	90.90%	5	9.0%
4	Can you search literature on internet?	18	81.81%	4	18.18%	45	81.81%	10	18.18%
5	Can you prepare power point presentation?	15	68.18%	7	31.81%	40	72.72%	15	27.27%
6	Can you prepare graph from MS Excel?	15	68.18%	7	31.81%	45	81.81%	10	18.18%
7	Can you use LCD projector for lesson delivering?	15	68.18%	7	31.81%	15	27.27%	15	27.27%

Table 2 shows that 100% of the teacher trainees were used computer and internet. 81.81% teacher trainee from both male and female can search engines. 100% male and 90.90% female teacher trainees can create email for their own. 68.18% male and 72.72% female teacher trainee started making PowerPoint presentations and using the LCD projector. 68.18% male and 81.81% female teacher trainees can use excel to prepare graph.

Major Findings

1. Below the average numbers of male and female teacher trainees used computer and internet at home and cyber cafe, whereas a few numbers of male and female teacher trainees used computer and internet at college with having the knowledge about power point and excel; and used LCD projector for lesson delivering.
2. After practical programme schedule of 30 days Cent percent of the teacher trainees were using computer and internet. Above the average numbers of teacher trainee from both male and female can search engines; create email for their own; started making PowerPoint presentations; used the LCD projector; use excel to prepare graph.

6. DISCUSSION

The present study attempted to assess the internet competencies of teacher trainees with regards to use of ICT, internet browsing, along with awareness about ICT. The findings revealing that significant differences were found between the awareness regarding ICT of male and female teacher trainees. After implementing the ICT training, significant changes were found among teacher trainees. A large number of trainees were found to use ICT and Internet. Table 1 shows significant difference between the theoretical and application awareness in the concept of ICT among male and female teacher trainees. Further the table shows that 45.45% male and 27.27% female teacher trainees used computer and internet at home and cyber cafe, whereas 36.36% male and 18.18% female teacher trainees used computer and internet at college. It is observed that 36.36% male and 18.18% female teacher trainees having the knowledge about power point and excel. A few i.e. 22.72% male and 09.09% female teacher trainees used LCD projector for lesson delivering. Table 2 shows that 100% of the teacher trainees were used computer and internet. 81.81% teacher trainee from both male and female can search engines. 100% male and 90.90% female teacher trainees can create email for their own. 68.18% male and 72.72% female teacher trainee started making PowerPoint presentations and using the LCD projector. 68.18% male and 81.81% female teacher trainees can use excel to prepare graph.

7. SUGGESTIONS

On the basis of above conclusions and discussion the following suggestions can follow up:

1. Teacher education needs to develop to integrate ICT appropriately.
2. All the teacher training institutions need to establish computer labs with Internet facilities.
3. ICT based activities must be added in to the curriculum of teacher education.
4. ICT based practice lesson for teacher trainees need to be developed.
5. Universities should introduce ICT based curriculum especially for teacher education.

6. Software must be developed in regional languages along with English.
7. Web-based education must be a part of new curriculum of teacher education.
8. Government as well as managements should released grants to teacher education institution to purchase ICT equipment.
9. Projects and programme must be designed to integrate ICT at schools by Government.

REFERENCES

- [1] Bharadwaj, A. P. (2005). "Assuring Quality in Teacher Education", University News, Vol. 43. No. 18.
- [2] Chauhan, S. S. (1992). Innovations in Teaching and Learning process. New Delhi: Vikas Publication House Pvt. Ltd.
- [3] Dahiya, S. S. (2005). ICT-Enabled Teacher Educator, University News, 43 page 109-114 May 2-8.
- [4] Dalton, D. W. (1989). 'Computer in the schools: A diffusion/adaptation perspective'. Educational Technology, 29 (11), 20-27.
- [5] Dash, K. M. (2009). ICT in Teacher Development, Neelkamal Publication Pvt. Ltd. Educational Publishers, New Delhi.
- [6] Dash, M.K. (2007). Integration of ICT in teaching Learning: A challenges, Edutract, Vol.6(12). pp 11-13.
- [7] Devananthan, (2008). Integration of ICT into Teacher Education. Proceedings of Intentional Conference, Bharathidasan University, Tiruchirappalli.
- [8] El – Hindi, A.E. (1998). 'Beyond classroom boundaries: constructivist teaching with Internet'. The reading Teacher, Vol.51, NO-8, pp. 694-700.
- [9] Goel, D.R. (2006). Quality Concerns in Teacher Education, Vadodara, CASE, MSUB.
- [10] Jaiswal, D. (2011). Role of ICT in Teacher Education. Edutract, Vol.10(11). Pp 9-10.
- [11] Mangal, S.K. (2007). Statistics in Psychology and Education, New Delhi, Prentice-Hall of India Private Limited.
- [12] Mohan, R. (2006). Research Methods in Education, Hyderabad, Neelkamal Publications Pvt. Ltd.
- [13] Mumtaz, S. (2000). 'Factor affecting teachers' use of information communications technology'. A review of the Literature Technology, Pedagogy and Education, 9 (3), 319-342.
- [14] Muthuchamy, I. (2010). Higher secondary students' perception towards ICT. Journal of Educational Research and Extension, SRMVCE, Vol.47(1).
- [15] NCTE (2002). ICT initiatives of the NCTE Discussion Document. New Delhi: National Council For Teacher Education.
- [16] Panda, B.N. (1997). Teacher Education, New Delhi, APH Publishing Corporation.
- [17] Swamy, A.M. (2010). Internet awareness and competence among high school students and teacher. Edutract, Vol.9(7). pp 41-43.
- [18] UNESCO (2002). Information and Communication Technologies in Teacher Education, A Planning Guide. Paris: UNESCO.
- [19] UNESCO , (2007). ICT in teacher education: case studies from the Asia-Pacific region. *Case studies highlighting the importance of ICT in teacher education programmes in the Asia-Pacific region.* Author: Meleisea, E. URL: <http://unesdoc.unesco.org/images/0015/001567/156757e.pdf>
- [20] UNESCO, (2005). Integrating ICTs into the Curriculum: *Analytical Catalogue of Key Publications*, UNESCO Asia and Pacific Regional Bureau for Education, ICT in Education Unit Bangkok, Thailand. URL: <http://www.unescobkk.org/education/ict>
- [21] Vijayarani K., (2005). Attitude towards Educational Technology among B.Ed students of Bharathidasan University. Unpublished M.Ed Dissertation, Bharathidasan University, Tiruchirappalli.