Study and Analysis of ICTs usage among Student Teachers

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Introduction

Information and Communication Technologies (ICTs) includes radio, television, computers, multimedia, cell phone and the Internet. In order to use technology effectively, educators need to be trained in using technology and they need to develop a good understanding of it. Technology is used to enhance learning, therefore it is important for educators to be comfortable using it to ensure that students get the full advantages of educational technology. Teaching with technology is different from teaching in a typical classroom. Teachers must be trained in how to plan, create, and deliver instruction within a technological setting. It requires a different pedagogical approach. Teachers must find a way to assess students on what they take away from a class and meaningful, known knowledge, especially within an e-Learning setting. Education will only change when our design methods, perspectives, and values change. Teachers have many roles when instruction is designed. They can be artists, architects, craftspeople, and engineers. Technology does not mean that using interactive electronic boards and LCD PowerPoint presentation is the most effective. So many more applications are available for students to be hands-on with their learning and gain deeper knowledge than they could before. Therefore, after analyzing the need for ICTs in education, the investigator showed interest to identify the usages of ICTs among Bachelor of Education (B.Ed.) trainees.

Basis of the Study

Around 270 million people are illiterates in our country. But the country has become one of the superpowers in technology. The realization is already there in our country to use ICTs for education purpose, but the utility is meagre. No doubt, India considers education is a primary force for the development of the Nation. So, the initiative has been made vigorously from the use of satellite in the early 1970s to presently exclusive satellite for education 'Edusat'. The country's first online educational enterprise came with the private initiative, when the National Institute of Information Technologies, Delhi established in 1981.

In India, at least some significant education challenges can be met through technology. Technology may be the magic cure India needs for the ills that plague its school education. There needs to be proper interface between technology and teachers. Use of technology and e-learning allow high quality teachers to expand their reach and "the future of education is online". (World Economic Forum's India Economic Summit, 2012).

ICTs are dominating now in all our private spheres, social and working environment. The implementation of Sarva Shiksha Abiyan (Education for All) helps the schools to get the infrastructure and learning facilities. Computers are provided to the larger numbers of

schools and Laptops to Higher Secondary Schools Students in Tamilnadu. So, the teachers are to be motivated and trained to use the technology. Availability of technological gadgets alone will not ensure the usability. Only properly trained teachers on the gadgets, will be able to use ICTs in classroom teaching. The trainees of Bachelor of Education should be trained in usage of ICTs for teaching-learning process and quality enhancement. Therefore, the present study is essential for understanding the level of usage of ICTs by the trainees of Bachelor of Education.

Objectives of the Study

The following are the objectives for the present research:

1. To study the usage of Information and Communication Technologies by Student Teachers in the State of Tamilnadu.
2. To investigate the usage of ICTs by Student Teachers based on the variables- gender, locality, medium of instruction, and qualification.
3. To find out usage of ICTs such as radio, television, cell phone, computer, Internet, multimedia, compact disc and EDUSAT based on the variable – gender.
4. To elicit the issues related to usage of ICTs by the learners of B.Ed.
5. To recommend the ways and means to use ICTs effectively by Student Teachers.

Population and Sample

A total population was 65,000 Student Teachers studied in the academic year 2012-2013 in 645 Colleges of Education affiliated to Tamilnadu Teachers Education University. Out of this population, a total of 320 Student Teachers were selected as a sample for the present study through simple random sampling technique.

Tools

The tool namely *"ICT Usage Scale"* was constructed and used for the present investigation. The Test-Retest method of reliability showed a correlation coefficient of 0.878 which indicates high reliability of the tool. The juries participated in validating the tool opinion that the tool had face validity and content validity. With regard to *Scoring Procedure,* the scoring for each statement is 4 for >16 hours of usage of ICT which is considered as very high usage, 3 for 10-15 hours of usage (high usage), 2 for 5-9 hours of usage of ICT (moderate usage), 1 for 1-4 hours of usage of ICT (low usage) and 0 for Not at all usage of ICT (nil usage). The *interview schedule was used as a supplementary tool* in the present study.

Variables

The investigator selected the gender, locality, medium of instruction and qualification as independent variables.

Research Design

The investigator wanted to collect the data, which give the basic information reflecting usage of ICTs by Student Teachers in teaching-learning process. Therefore, an exploratory research approach similar to that of a survey was found to be more appropriate.

Data Collection and Statistical Techniques

The investigator collected the data from the subjects through the teaching faculties of colleges of education by distributing the tool. The investigator conducted interview for

10 Student Teachers. Quantitative analysis was made on the data collected by finding the mean, standard deviation, and 't' value. The quantitative analysis of the data was supplemented by the results obtained through qualitative method such as interviews.

Analyses and Findings

The scores of the variable 'Information and Communication Technologies' were analysed based on independent variables gender, locality, qualification and medium of instruction.

Table 1: Test of Significance as per the Variables

Variable	Number of Student Teachers (N)	Mean	Standard Deviation (S.D)	't'	Result Significant Difference at
Male	160	23.5	4.32	2.88	0.01 level
Female	160	22	5.02		
Rural	160	17.3	4.89	3.47	0.01 level
Urban	160	19	3.95		
UG Degree	160	23.2	6.32	3.85	0.01 level
PG Degree	160	25.67	5.25		
Tamil	160	25.4	5.32	4.17	0.01 level
English	160	26.5	6.12		

Table 2: Test of Significance as per Gender on ICT

ICT Gadget	Variable	Number of Student Teachers (N)	Mean	Standard Deviation (S.D)	't'	Result At 0.01 level
Radio	Male	160	22.5	6.32	2.45	No Significant difference
	Female	160	24	4.5		
Television	Male	160	25.32	5.6	3.96	Significant difference
	Female	160	27.5	4.23		
Cell Phone	Male	160	26.25	3.62	3.5	Significant difference
	Female	160	24.5	5.25		
Computer	Male	160	23.5	5.26	6.72	Significant difference
	Female	160	19	6.57		
Internet	Male	160	26.35	4.5	4.12	Significant difference
	Female	160	24	5.6		
Multimedia	Male	160	25.6	6.21	3.79	Significant difference
	Female	160	23.1	5.57		
Compact Disc	Male	160	24.6	5.11	1.70	No Significant difference
	Female	160	25.5	4.26		
EDUSAT	Male	160	23.25	3.18	5.49	Significant difference
	Female	160	21	4.16		

The result showed in Table 1 reveals that there is *significant difference between the attributes of gender; locality; qualification; and medium of instruction on ICT usage at*

0.01 level. When we compare the mean values of variables, we could find the results: Male students were utilizing the ICT more than the female students. Rural students were utilizing ICT lesser than the urban students. The usage of ICT was more among PG qualified students when compared to UG qualified students. English medium students have used the ICT more than the Tamil medium students.

The Tabe 2 reveals that usage of radio and compact disc by male and female students showed that there was no significant difference between them. Significance difference was found among male and female students in usage of television, cell phone, computer, internet, multimedia and Edu-sat. The difference has come because of availability, accessibility and training for Student Teachers on ICT Education. The individual interest and motivation have also played role in usage of ICT.

During interview, the subjects revealed the remedial measures for overcoming the problems of using ICTs in education.

1. The Education Department should give the orders to the schools to procure the ICTs gadgets and facilities.
2. The Education Department should insist the in-service teachers to get technological literacy.
3. Each institution should ensure the availability and accessibility of ICTs for education of children in schools.
4. A separate room with infrastructure and staff for handling ICT gadgets should be given to the schools.
5. Student Teachers should be allowed to use ICTs in college and school during their study.
6. The separate fund allocation should be given to the schools to develop and use ICTs for the education of children.
7. Educational CDs should be procured for use in classroom.
8. Radio and television programmes related to the education of children in school should be arranged.
9. Classrooms should be set with a techno-friendly environment.

Recommendations

The findings of the study have many implications on education incorporating ICTs.

1. The National Policy on ICT in Education should be brought out and implemented for raising the quality of education.
2. ICTs should be used as a medium in education for the faster and easier learning, and building most up-to-date knowledge.

3. ICTs should be inbuilt in curriculum whenever the revision takes place. ICT should not be a subject alone to take up the theoretical knowledge but it should an application tool to be used for teaching and learning.
4. ICTs should be infused into the entire curriculum of teacher education, Throughout their teacher education experience and professional development programmes, pre- and in-service teachers should learn how to incorporate ICTs into their own subjects.
5. ICTs must be used in innovative and motivating ways in education to develop self-learning, interactive learning and self-paced learning.
6. Suitable combinations of media – print, audio, video, and technologies like computers and the Internet – must be selected according to the needs of the learners.
7. The Colleges of Education should be equipped with ICT gadgets for the usage of trainees.
8. The University should take the initiative to produce the CDs for the subjects which will help the learners for their learning.
9. Reference materials and books should be uploaded in the website of the University in order to facilitate the learners to access the material as they require.
10. It is very important that all trainee teachers are to be trained on appropriate ICT competencies which will enable them to utilize the ICT for their learning and teaching.

Conclusion

The present study focused that ICTs contribute for the effective teaching and learning of Student Teachers. It is essential to prepare the trainee teachers as technologically literates and effective users of ICTs in their learning and teaching process which will promote the quality of education.