A Study on the ICT Awareness of M.Ed. Trainees

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Abstract

Information and communication technologies (ICT) have become common place entities in all aspects of life. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavor within business and governance. Within education, ICT has begun to have a presence but the impact has not been as extensive as in other fields. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings and often this creates some tensions for some teachers and students. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. This paper highlights the various impacts of ICT on contemporary teacher training institutions of education and explores potential future developments. The paper argues the role of ICT in transforming teaching and learning and seeks to explore the awareness of teacher educators about use of information and communication technology for effective teaching learning process and how this will impact on the way programs will be offered and delivered in the teacher training institutions.

INTRODUCTION

For India to emerge as a knowledge super power of the world in the shortest possible time it is imperative to convert our demographic advantage in to knowledge powerhouse by nurturing and honing our working population in to knowledge or knowledge enabled working population.

Mission Document NMECIT MHRD (2007)

Information is a driving force in the world and intensely making impact on economy, development and social growth of any nation. Emergence and innovation in information and communication technology (ICT) is dividing the universe in different dissection. This division is broadly known as 'Digital Divide 'on the world map. The concept of the 'Digital Divide' expresses the gap in access to information resources in some countries compared with those with state –of-the-art network: telephone, radio, TV, internet, satellite, in short anything that can be classed as information and communication technology. Thus the digital divide expresses the difference in facilities for pupil to communicate, relative to their geographic location, their living standard and their level of education. It is an indicator of a country's economic and social situation. Quality education is a universal goal. As stated in the book bridging the diversity divide, "as institution of higher learning prepare students for an era of explosive change, curricula and literacy must also reflect the expanding frontier of knowledge" (chun,2009).

The past decades has seen the burgeoning importance of information technology in the delivery of education around the world. The seemingly rapid rise to prominence of technologies such as the internet is viewed by many educationists as having profound and far reaching implications for the way in which teaching and learning takes place across all stages of education, from the preschool years to learning by the elderly and retired. The rise of both technology and lifelong learning to the fore of educational and political consciousness has forced policy makers and educationist to address the relationships among social exclusion, education, and technology.

Information and communication technology (ICT) is a force that has changed many aspects of the way we live. If one was to compare such fields as medicine, tourism, travel, business, law, banking, engineering and architecture, the impact of ICT across the past two or three decades has been enormous. The way these fields operate today is vastly different from the ways they operated in the past. But when one looks at education, there seems to have been an uncanny lack of influence and far less change than other fields have experienced.

There have been a number of factors impeding the wholesale uptake of ICT in education across all sectors. These have included such factors as a lack of funding to support the purchase of the technology, a lack of training among established teaching practitioners, a lack of motivation and need among teachers to adopt ICT as teaching tools.

But in recent times, factors have emerged which have strengthened and encouraged moves to adopt ICTs into classrooms and learning settings. These have included a growing need to explore efficiencies in terms of program delivery, the opportunities for flexible delivery provided by ICTs; the capacity of technology to provide support for customized educational programs to meet the needs of individual learners; and the growing use of the Internet and WWW as tools for information access and communication. As we move into the 21st century, these factors and many others are bringing strong forces to bear on the adoption of ICTs in education and contemporary trends suggest we will soon see large scale changes in the way education is planned and delivered as a consequence of the opportunities and affordances of ICT.

Technology Tools for Teaching & Training in India

As new technologies transform the workplace, workers must have the ability to cope with change, take responsibility for their learning, think critically to solve problems, and work cooperatively in a team environment. Instructional technology can prepare students to meet these workplace challenges while keeping them motivated and interested. In the past, some instructional media failed to fulfill their promise. Videodisc and CD-ROM offers a combination of media-- computers, video, audio, and graphics that has greater potential to:

- 1. Increase opportunities for individuation, diagnosis, and self-pacing
- 2. Give access to a wide variety of information resources
- 3. Bring resources to isolated or limited-mobility populations
- 4. Stretch instructors' capabilities to reach more students
- 5. Accommodate different learning styles

6. Provide better ways to measure skills than standardized testing.

The impact of ICT on students, teachers and teacher educators

Education is a process of human enlightment and empowerment for the achievement of a better and higher quality of life. Teaching is an ever changing profession. The field of education is expanding each year as advancement is made in technology and brain based research. To keep pace with the changing world, teachers must have current knowledge and skills of educational technology.

Just as technology is influencing and supporting what is being learned in schools and universities, so too is it supporting changes to the way students are learning. Moves from content-centered curricula to competency-based curricula are associated with moves away from teacher-centered forms of delivery to student-centered forms. Through technology-facilitated approaches, contemporary learning settings now encourage students to take responsibility for their own learning. The growing use of ICT as an instructional medium is changing and will likely continue to change many of the strategies employed by both teachers and students in the learning process.

a. Student-centered learning

Technology has the capacity to promote and encourage the transformation of education from a very teacher directed enterprise to one which supports more student-centered models. Evidence of this today is manifested in:

- The proliferation of capability, competency and outcomes focused curricula
- Moves towards problem-based learning
- Increased use of the Web as an information source,

The use of ICT in educational settings, by itself acts as a catalyst for change in this domain. ICTs by their very nature are tools that encourage and support independent learning. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools, the influence of the technology on supporting how students learn will continue to increase.

b. Supporting knowledge construction

The emergence of ICTs as learning technologies has coincided with a growing awareness and recognition of alternative theories for learning. In the past, the conventional process of teaching has revolved around teachers planning and leading students through a series of instructional sequences to achieve a desired learning outcome. Typically these forms of teaching have revolved around the planned transmission of a body of knowledge followed by some forms of interaction with the content as a means to consolidate the knowledge acquisition. Contemporary learning theory is based on the notion that learning is an active process of constructing knowledge rather than acquiring knowledge and that instruction is the process by which this knowledge construction is supported rather than a process of knowledge transmission. Learning approaches using contemporary ICTs provide many opportunities for constructivist learning their provision and support for resource-based, student centered settings and by enabling learning to be related to context and to practice. As mentioned previously, any use of ICT in learning settings can act to support various aspects of knowledge construction and as more and more students employ ICTs in their learning processes, the more pronounced the impact of this will become.

The impact of ICT on when and where students learn

In the past educational institutions have provided little choice for students in terms of the method and manner in which programs have been delivered. Students have typically been forced to accept what has been delivered and institutions have tended to be quite staid and traditional in terms of the delivery of their programs. ICT applications provide many options and choices and many institutions are now creating competitive edges for themselves through the choices they are offering students. These choices extend from when students can choose to learn to where they learn.

a. any place learning

There is a concept of flexibility in the delivery place of educational programs. Educational institutions have been offering programs at a distance and there has been a vast amount of research and development associated with establishing effective practices and procedures in off-campus teaching and learning. Use of the technology has extended the scope of this activity and students are able to make this choice through technology-facilitated learning settings.

b. anytime learning

In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs. Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments.

ICT in Education: Policy and Initiatives

It is against this backdrop that we need to view the role of information and communication technologies (ICT) in education in India.

For the purposes of this discussion, ICT in education can be:

- Alternative instructional delivery systems such as radio, educational TV, and audio-visual communication
- Computers and computer-based systems for instructional delivery and management, such as CAI (Computer Assisted Instruction), use of multi-media and Internet/web based education (Rai & Bhattacharya)
- Since the 1950s, policy has consistently favoured the use of ICT in education (Reddi & Sinha (2004) :

"From the use of radio to spearhead the green revolution, to satellite-based, one-way and interactive television for rural development in some of the most backward districts, to today's thrust for the use of open and distance learning models to serve the larger populations, India has tried it all, with varying degrees of success... Radio has a penetration of 100 per cent in the country while satellite and terrestrial television cover nearly 80 per cent of the country"

Gyan Darshan was launched in January, 2000, with three completely digital and round-the-clock TV channels dedicated to education. In November 2001, an FM radio channel, Gyan Vani was launched through different FM stations in the country. (GOI Ministry of HRD Press Release, October 21, 2003).

ICT in Higher Education

Based on recommendations made by different state open universities and distance education institutions (DEIs), the Indira Gandhi National Open University's (IGNOU) board of management has approved the National Open and Distance Learners Library and Information Network (NODLINET) initiative. The expert committee set up by the ministry for human resource development (MHRD) has endorsed the initiative, which will now be implemented in a phased manner within a period of five years. (Times News Network, April 22, 2007)

At the international level, the United Nations has generated the "Global school and Communities Initiative" (Gesci), a special campaign to promote the use of technology in education (UNESCO Website (d)). From their Bangalore base, Gesci will work with the Indian ministries of Information Technology and Education facilitating policy support, technical assistance and global resources for the initiative.

Importance of ICT in Education:

ICT in Education is the foundation upon which a country develops. It is a dynamic force in the life of every individual influencing his physical, mental, emotional, social and ethical developments. It is a complete development of the individuality of a child enabling him to make original contribution to human life

REVIEW OF RELATED LITERATURE:

Jasmine kumar and et al, conducted study on "professional competency of teachers and teacher educators in relation to their ICT usage" with the sample of 30 teacher educators and 50 teacher from Government, Government Aided and Aided Minority institution in Chennai city, Tamilnadu. Reported that professional competency and ICT usage are significantly related.

- Selvam .M. conducted a study on "Attitude of matriculation teachers towards educational technology an investigation" with 79 teachers selected from the matriculation schools located in Erode as sample concluded that there is no significant difference in the mean attitude scores of matriculation teachers towards Educational Technology between the sub-variables like gender, age, religion and marital status.
- Angel Rathnabai, conducted study on "Infusing ICT in teaching learning process: A Reflection" places namely Mysore, Pondicherry and Tumkur. It was hypothesized that CAI approach would be effective than traditional approach on acquisition and retention of knowledge and it would be an effective reinforcement tool. The students undergoing the CAI approach has found to score more in knowledge acquisition test and in the test conducted after reinforcement than the students undergoing traditional approach. The mean scores reveal that the students under CAI approach has scored more than the students under traditional approach in the delayed test conducted after a month. Thus infusing ICT in teaching learning process enhances the teaching and learning which in turn provides the quality education.
- **Illayaperumal**, in a study on **"Perception of student teachers towards the role of technology in education for sustainable development**" with the sample of 100 student teachers (50 M.Ed.., and 50 D.T.Ed.,) selected from the union territory of Puducherry, Concluded that the perceptions of student teachers are above average. Also a significant difference is observed between the groups regarding locality, type of selection and community. Therefore it is necessary for our future teachers to have the knowledge and understanding of the role of ICT in sustainable development.
- **Priya**, a study on "**An analysis of web usage among teacher educators and student teachers**" reported that WWW is considered as an important learning environment among the Student Teachers and Teacher Educators. The Student teachers access the Web more than the Teacher Educators. It shows that the internet has not penetrated fully in every sphere of life, particularly in the academia.

Need for the study

Teachers have always played a crucial role in preparing communities and societies towards exploring new horizons and achieving higher levels of progress and development. Hence effective combination of Educational Technology and teaching skills contribute solutions to the problems of the country by developing desirable understanding of attitudes, skills and abilities of the students. The role of teachers and teacher educators is complex to meet the individual needs of the learners.

The teachers face innumerable number of challenges in their daily classroom teaching. They are to be equipped with the most relevant research works and progress taking place in the technology of teaching; this also enhances the quality of teaching.

OBJECTIVES OF THE STUDY:

- To study the ICT awareness of M.Ed. Trainees.
- To study the effect of gender and type of management of the institution on the ICT awareness.

HYPOTHESIS OF THE STUDY:

There will be significant difference in the mean scores of awareness about ICT (information and communication technology) in education among M.Ed. students based on gender and type of management.

METHOD & PROCEDURE

Descriptive survey research is used in this study. **Sample**

The present study was conducted on a sample of 60 M.Ed. students from aided and unaided training colleges of Meerut district. The investigator adopted stratified random sampling techniques. Out of 60 students 15 male students and 45 female students were identified.

Tools used:

ICT awareness tool (constructed and standardized by the investigators) with five dimensions viz M.Ed. students' perception towards ICT, M.Ed. students' awareness towards ICT, M.Ed. students' attitude towards ICT, M.Ed. students' teaching effectiveness and ICT and M.Ed. students' utilization of ICT resources.

Statistical technique:

Mean, Standard deviation and t-test are the statistical technique used in this study.

Data analysis

Data was analyzed through preliminary analysis and classificatory analysis. In order to find out the level of awareness among different categories, classificatory techniques was employed by taking mean and standard

deviation as the determinants. By doing this students of different categories can be grouped in to high, moderate, and low groups. The mean and standard deviation of the awareness of students presented in table 1.

Table 1 Mean and Standard Deviation of the Awareness of M.Ed. Students

Sample	Ν	Μ	S.D.
M.Ed. students	60	18.4	3.59

From the table the Mean and S.D. of M.Ed. students are found to be 18.4 and 3.59 respectively. To find out the level of difference in awareness among the M.Ed. students based on, gender, type of management are presented in following table 2.

Table 2 % of Awareness of M.Ed. students								
Category	Туре	score	%					
	High	6	17.14					
Aided management	Moderate	22	62.86					
Aldeu management	Low	7	20.00					
	Total	35						
	High	5	20.00					
Lin Aided management	Moderate	20	80.00					
Un Aldeu management	Low	0	0.00					
	Total	25						
	High	6	13.00					
Fomalo	Moderate	32	71.00					
Female	Low	7	16.00					
	Total	45						
	High	5	33.00					
Mala	Moderate	10	67.00					
IVIAIC	Low	0	0.00					
	Total	15						

Table reveal that out of 35 aided management M.Ed. students there are 6 (17.14%) students of having high in the awareness of ICT, and 7 (20%) students in low group and 22 (62.86) students included in moderate group of having average knowledge about ICT (information and communication technology). Out of 25 self financing M.Ed. students only 5 (20%) students having more information about use of ICT in education, there is no students belonging to low group, and 20 (80%) students only 6 (13%) students having more information about use of ICT in education. Out of 45 female M.Ed. students only 6 (13%) students having more information about various technologies that use in education for effective teaching and learning, there is 7 (16%) students belonging to low group, and majority of 32 (71%) students included in moderate group of having average knowledge about ICT. Out of 45 female M.Ed. students having more information about use of ICT in education, there is 7 (16%) students belonging to low group, and majority of 32 (71%) students having more information about use of ICT in education, there is 7 (16%) students belonging low group, and majority of 32 (71%) students having more information about use of ICT in education, there is 7 (16%) students belonging low group, and majority of 32 (71%) students having more information about use of ICT in education, there is 7 (16%) students belonging low group, and majority of 32 (71%) students included in moderate group of having average knowledge about ICT. Out of 45 female M.Ed. students only 6 (13%) students having more information about use of ICT in education, there is 7 (16%) students belonging low group, and majority of 32 (71%) students included in moderate group of having average knowledge about use of ICT in education.

T-test was conducted to study the significance of the difference in means.

Table 3 t value of M.Ed. students based on gender and management type

Туре	Ν	Μ	S.D.	df	t	S/NS
Male	15	20.8	3.69	- 59	3.002	S
Female	45	17.6	3.22			
Aided	35	18.08	4.12	- 59	59 0.86	NC
Unaided	25	18.84	2.70			UND

Table 3 reveal that there is significant difference (t value = 3.002) among male and female M.Ed. students in their knowledge about use of ICT in education. So the male students are shown higher awareness than female students for the use of ICT in education and there is no significance difference (t value = 0.856) among type of management in their knowledge about use of ICT in education.

FINDINGS OF THE STUDY

- 1. Male M.Ed. students possess significantly higher awareness of ICT in education than female M.Ed. students.
- 2. Management of the M.Ed. College does not effect on the awareness of use of ICT in education.

IMPLICATIONS OF THE STUDY

This study is helpful to

- Establish the ICT based culture among the teacher trainees.
- Cultivate the trainees' enthusiasm for ICT to make their society into "informative society".
- ICT stimulates educators to start a revolution in the whole educational system.
- ICT enhances the awareness among the trainees to increase their capability and independence to search for and acquire the knowledge they need in their teaching process.
- Expose them to environments of positive world-wide competence which leads into quality-based attitudes in their future teaching process.

CONCLUSION

ICT has undoubtedly become a powerful tool that is breaking the traditional methods of education. ICT based teaching learning process may lead to effectiveness and efficiency of educational system. Now a day, most of the educational institute has ICT facilities in their college itself. They are sensitizing the relevance and importance of ICT in teacher education field. An attempt is made to study ICT awareness among M.Ed. Trainees. Based on the findings, the implications of the study are suggested.

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