A STUDY OF AWARENESS AMONG STUDENT-TEACHERS AND TEACHERS REGARDING ROLE OF ICT FOR TEACHER EDUCATION

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Abstract

Education is one of the main keys to economic development and improvements in human welfare. Information and communication technology (ICT) is playing a central role in the development of modern economies and societies. As the world is going through the technological revolution, adoption of new technologies in the education system is the most important. This has profound implications for education, both because ICT can facilitate new forms of learning and it has become important for young people to master ICT in preparation for adult life. The use of ICT has the potential to enhance the real world experiences, the educational institutions should emphasize on the use of ICT for both administrative and academic efficiency. Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change. For education to reap the full benefits of ICTs in learning, it is essential that pre-service and in-service teachers have basic ICT skills and competencies. Teacher education institutions and programmes must provide the leadership for pre-service and in-service teachers and model the new pedagogies and tools for learning. They must also provide leadership in determining how the new technologies can best be used in the context of the culture, needs, and economic conditions within their country. To accomplish these goals, teacher education institutions must work closely and effectively with student-teachers and administrators, national or state educational agencies, teacher unions, business and community organizations, politicians and other important stakeholders in the educational system. Teacher education institutions also need to develop strategies and plans to enhance the teaching-learning process within teacher education programmes and to assure that all future teachers are well prepared to use the new ICT tools for learning.

Introduction :

Educational systems around the world are under increasing pressure to use the new information and communication technologies (ICTs) to teach students the knowledge and skills they need in the 21st century. The 1998 UNESCO World Education Report, *Teachers and Teaching in a Changing World*, describes the radical implications the new information and communication technologies have for conventional teaching and learning. It predicts the transformation of the teaching-learning process and the way teachers and learners gain access to knowledge and information. It states:

To effectively harness the power of the new information and communication technologies (ICTs) to improve learning, the following essential conditions must be met:

• Students and teachers must have sufficient access to digital technologies and the Internet in their classrooms, schools, and teacher education institutions.

• High quality, meaningful, and culturally responsive digital content must be available for teachers and learners.

• Teachers must have the knowledge and skills to use the new digital tools and resources to help all students achieve high academic standards.

Teacher education institutions are faced with the challenge of preparing a new generation of teachers to effectively use the new learning tools in their teaching practices. For many teacher education programmes, this daunting task requires the acquisition of new resources, expertise and careful planning.

In present scenario, teachers need to help their students in: how to learn, how to grow in future, how to develop study skills, how to conduct fundamental research, how to examine, evaluate and assess information and also how to question and then dismantle unauthentic structure of knowledge and cognition if need be. This is necessary if the teachers really want to survive in the ICT savvy world of education.

Literature review :

1. The history of the use of ICTs in education is relatively short. Before 1979, computers existed primarily in tertiary level educational institutions. Then, in the eighties, microcomputers began to be distributed to schools, and teachers began to grapple with the question of how to use computing for education rather than simply educating about computing. Starting from the mid-nineties, the use of ICTs in schools rapidly expanded in developed nations through curriculum support, networking, the professional development of teachers and software improvements.

2. A growing number of researchers and educators began to develop applications that used hypertext, multimedia and networking to build cognitivist and constructivist learning environments aimed at improving learning.

3. However, these applications were initially found to be ineffective in attaining better results as compared to learning outcomes achieved through traditional pedagogies and assessed against traditional metrics. This finding may be largely influenced by teachers' and learners' lack of familiarity with ICTs as well as the inappropriateness of the traditional metrics in and of themselves.

4. In recent years, bandwidth has greatly increased and user familiarity with the Web and ICTs in general has evolved, contributing to an evolution of the Web. Policy based on the prevailing ideas about ICTs has also been a major driver shaping the adoption of ICTs in education. For example, the late 1980s and early 1990s were dominated by rhetoric surrounding the idea of the transition from the Industrial Society to the Information Society, where managing, generating and sharing information would be key to national economies maintaining the cutting edge in an increasingly globalize market.

This idea promoted the concept that the education system would need to create a "learning culture," which would prepare citizens for lifelong learning in an information society; which is the prime necessity for building digital society.

ICT and Teacher Education:

There are a variety of approaches to professional development of teachers in the context of use of ICT in education. Professional development to incorporate ICT into teaching and learning is an ongoing process and should not be thought of as one 'injection' of training. Teachers need to update their knowledge and skills as the school curriculum and technologies change. Two aims of teacher training are fundamental: teacher education in ICT; and teacher education through ICT.

Title of the Research:

"A Study of Awareness among student-teachers and teachers regarding ICT for teacher education".

Importance and Role of ICT to elevate teachers education :

In almost all sectors of education the role of the teachers is changing from being not only a transmitter of knowledge but also that of facilitator of the teaching-learning process. Owing the onset of information and communication technology, new applications of technology and enhanced accessibility to it are introducing new possibilities of teaching and learning. The traditional boundaries of the classroom are giving way to virtual learning and online courses. All these development would have profound impact on teacher education programmes and processes.

Teacher education programs at the pre-service and in-service levels must have ample scope for inducting pedagogic skills and management of technologies as important components of teaching learning environment to enhance efficacy to transaction. These need to integrate teaching-related practices with the existing methodology course and introduce specialized course to equip the student teachers with skills to operating and maintaining hardware, acquiring and utilizing software of different kinds i.e. structured textual materials, teaching aids, audio-visual cassettes, multimedia, CD ROMs, DVD's, Educational programmes and sharing information through networking in collaborative and participative methods. The application of ICT in the education setting has to be cultivated, promoted and nurtured.

Teacher educators have to develop new understanding approaches and attitudes in harmony with new developments in information technology. Their proficiency in these areas would help them to train student teachers effectively. Teacher's education institutions will have a take leadership in using information technology.

The 21st century teachers and student require the lenses of learning form ICT with ICT around ICT with the skills of :

1. Digital are literacy Basic, Scientific, and technological literacy.
2. Effective communication-social and personal skills-Teaming collaborative and interpersonal skills.
3. Inventive Thinking Intellectual capital ability of manage complexity courtesy.

Research Objectives :

1. To study awareness of student-teachers towards 'ICT'.
2. To explain differences among teaching-learning methods.
3. To know existing educational policies curriculum & syllabi skills for effective transaction of curriculum i.e. new educational development.

4. Integrated & holistic approach; inculcating social cultural aesthetic. Moral & scientific values responsive & transparent evaluation.
5. Empowering teachers to guide learning for self study, reference skills, critical thinking adopting various methods such as project work & tutorials. Research attitude.

Research Assumptions :
1) Student-teachers are aware about 'ICT'.
2) Teachers are aware that education is compulsory in India.
3) Student-teachers should know that there are many teaching-learning methods.
4) Student-teachers should know that how to update their knowledge and how to get latest information for using ICT.

Hypothesis :
1. There is no significant difference in awareness of students-teachers regarding 'ICT' in pre-test scores and post-test scores.
2. There is no significant difference in using latest information and updating their knowledge of student-teachers regarding 'ICT' in pre-test scores and post-test scores.

Rationale:
The need regarding the awareness of ICT for future teacher education has also become an important aspect of teacher education. The teacher educators and student-teachers would be benefited by such surveys and can plan the required orientations properly.

Sample:
Incidental sample.
78 students of B. Ed. class of S.N.D.T. College of Education, Pune were selected as the sample for research.

Research Methodology : Survey Method.

Tools :
1. S.N.D.T. Women's University's B. Ed. Syllabus (2011-2012).
2. Questionnaire for student-teachers (i.e. Pre-test and Post-test).
3. Instructional Program on ICT (PPT)

Statistical treatment :
Use of 't-test' to compare the pre-test and post-test scores and to test the hypothesis.

Scope and limitations :

Scope :
1. The instructional programme could be used for other students also.
2. It could be implemented for student-teachers.
3. It could be implemented for school teachers whose already a teacher.
4. It could be implemented as a new methodology for student.

Limitations :
1. The instructional programme will focus only on improving 'ICT' knowledge.
2. It does not include any activities to improve other skills.
3. The instructional programme will be for B. Ed. students.
4. The limitations of this program is that it is used only for S.N.D.T. College of Education, Pune which include in this research.

Data analysis:

Data collected through Questionnaire (i.e. Pre-test and post-test) and observation for student-teachers internship and their practice lessons.

After the data is collected, analysis is to be done to find out the results of the research done. The basic objective is to find out whether the hypothesis framed by the researcher is valid or not.

Analysis is the concept of putting data into meaningful perspective. It makes relationship between different units of data appear meaningful.

The post-test scores are considered as indication of the effect of the instructional programme. These post-test scores are used as basic data for testing the hypothesis dealing with the significant difference between the pre-test and post-test scores. Therefore, the hypothesis is accepted at 0.01 level of significance and 0.05 level of significance.

		Actual 't-value'		
No. of students	t-value	D.F.	Level of Significance 0.01	Level of Significance 0.05
50	8.27	49	2.58 Accepted	1.96 Accepted

As the experiment was done as single group design and the hypothesis deals with the effectiveness of the training programme it test was used.

Recommendations :

Some of the recommendations are given below :

• Training for all levels of teachers, assistants who are involving in educational institutions.

• Establishment of lab facilities and internet availabilities for all the students, teachers and assistants.

• Basic ICT course should be compulsory in all form of educations.

• Personnel with basic ICT knowledge should be appointed in all form of educational institutions.

• Use of ICT and multimedia in the education makes it interesting and fruitful.

• Website of the institution should be compulsory along with regular updates.

• Central registration system for the students should be implemented mandatory.

• Use of student database, automated account in the institutions for faster administration should be employed.

• Facilitating electronic professional research journal and periodicals access to foster the level of technology savvy mind of the people and more importantly featuring the educators and students to access the emerging arena of knowledge.

• Making an open platform to share the academic and other relevant thoughts among vast people which would dimensionally the incepted concepts.

• Establishment of digital libraries or information repository may also be done by the educational institutions which may provide invaluable materials to the researchers, educators and students as well as other interested people.

- In disseminating ICT and new technologies which may improve the overall life style of the mass people may be acquainted through conferences, workshops and other technical gatherings arranged by the educational institutions in collaboration with other agencies

Conclusion:

The teacher education system empowered by ICT driven infrastructure can have a great opportunity to come up to the centre stage and ensure academic excellence, quality instruction and leadership in a knowledge-based a society.

It is predicted that there will be many benefits for both the learner and the teacher, including the promotion of shared working space and resources, better access to information, the promotion of collaborative learning and radical new ways of teaching and learning.

ICT has revolutionized the entire concept of education, learning and research by offering new opportunities and challenges in creation and dissemination of information by way of Web TV's, Net PC's and Web-based education independent of time, pace and place. It is really a challenging task to strengthen ICT in teacher education because a large majority of the teacher education institutions are unequipped or under-equipped in the terms of digitized and high-tech infrastructure.

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