

CONTRIBUTION OF ICT IN EDUCATION: A NEW HORIZON**Gupreet Kaur*** (Research Scholar)**Dr. Susanta Kumar Pradhan**** (Supervisor)

ABSTRACT

We believe that when we talk about ICT in schools and also in teacher education we shouldn't only be concerned with the 'means', that is to say, how to introduce computers or how to use a word processor and Internet resources, but also with the 'ends'.

Teacher is considered to be the architect of the nation. In other words, the future of the nation lies in the hands of teacher. This shows the importance of teacher. One can realize how important education is which makes one a teacher. Teacher education is looked after by a systematic operation of various agencies involved in it. In our country, no system is free from problems; teacher education is not an exception to it

This paper is a description of an in-service teacher training experience that used ICT to develop a project that involved teachers and also children, parents and other members of the educational community. Its aim was to build an Internet site that would give information about school life. It's an open web space where teachers, parents and students can express and share their ideals and activities. This project is still in progress and is being developed in three interconnected phases: conception, development and evaluation. The most important issue to relate is that the technical or instrumental learning is dependent on the ideas and purposes of teachers, students and parents.

Keywords: *Information Communication and Technology (ICT), Education, Development, Paradigm*

*CMJ University, Shillong, Meghalaya

**Principal, K.N.I.T.T. Institute, Murshidabad, West Bengal

INTRODUCTION

Teacher is considered to be the architect of the nation. In other words, the future of the nation lies in the hands of teacher. This shows the importance of teacher. One can realize how important education is which makes one a teacher. Teacher education is looked after by a systematic operation of various agencies involved in it. In our country, no system is free from problems; teacher education is not an exception to it.

Various education commissions and a number of expert committee have discussed the aims of teacher education in India. Unfortunately, barring a few exceptions, our universities and institutions of higher learning have largely not been able to live up to these great expectations. On the contrary, they have just become bodies for conducting stereotyped examinations and degree-awarding centers. The quality and reliability of such exams and degrees is also sometimes questionable. One of the main reasons is the inadequate academic, professional and pedagogic preparation and insufficient level of knowledge and the skills of the faculty. Besides this, traditional versus modern methods of teaching, outdated knowledge and information and lack of skills, teachers attitude, aptitude and authenticity of their sources of knowledge are some of the other core issues. Owing to knowledge explosion and tremendously fast changing ICT, the teachers sometimes find it rather difficult to cope with the new intellectual challenges being thrown up by the changed global and local context. Therefore, they need to acquire new knowledge, and reliable and authentic information.

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. All these expectations may be met only through need-based, goal-oriented and meaningful in-house discussion, conferences, symposia, workshops, refresher and orientation courses, crash courses, capsule courses and subject-based courses, interdisciplinary and holistic approaches to education and quality research and by enriching the existing libraries and making use of the user-friendly ICT with contextually appropriate and firm pedagogical scaffolding. The teacher educators and individual teacher ought to sincerely and persistently work hard toward this goal.

According to Verma (2010), a teacher plays a significant role not only in class teaching learning situation but in social engineering too. Society gives a respectable place to teachers

who are really perspective empowered. This empowerment is not at in terms of physical perspective. It is in academic, intellectual, social, and national perspectives.

In India as in rest of the world phenomenal changes are taking place in almost all walks of individual, social and national life at fast track. Since education plays a pivotal role in liberation of individuals from ignorance, exploitation and poverty and makes the nation enlightened, prosperous and empowered, it has to respond to the demand of the changing times to retain its relevance and effectiveness.

Planed change in education with an overall qualitative improvement can be instrumental in achieving the target of a better and a higher quality of life. This change in education scenario would rest on the academic acumen chiseled professionalism and unshakable commitment of teachers and teacher educators working in perfect consonance with educational planners and managers. Their vision, zeal imagination and creativity have to be continuously supported by fresh academic enrichment and research based pedagogic innovations.

Generally in the societies, the status of teachers holds a very high position because the teachers is the only person on whose shoulders lies the burden of the development of the younger generation. Secondary Education Commission has rightly stated “we are however convinced that the most important factor in the contemplated reconstruction is the teachers, his personal, his educational qualifications, his professional training and the place that the occupies in the school as well as in the community. The reputation of a school and its influence on the life of the community invariably depended on the kind of teachers working in it.

NEED OF ICT IN SCHOOLS

Why do we need ICT in schools? Was education not happening before computers came into existence? Why is this paradigm shift necessary? The shift is necessary because this is the age of information and technology, an age that requires that teachers facilitate the gathering of this information and not merely teach.

Unfortunately, in India, ICT is largely associated with the use of computer and Internet. What one uses ICT for and how one uses it, is not addressed sufficiently. Schools and colleges acquire computers, Internet connection, LCD projectors and then send their teachers for crash courses that supposedly teach them to use technology. The trouble is this whole approach is devoid of focus. But, until teachers are made to realize the need of ICT, no amount of computerization can help.

Training a teacher in using ICT is more crucial than acquiring a large number of computers. Teachers have to be trained to facilitate the learning process, make the process real, achievable, challenging, yet exciting and not intimidating. Reducing teacher talk and encouraging student discussion is extremely important. Everything need not be written on the blackboard to be considered as taught. Many teachers think the computer is used only to make the content look attractive! They need to know that in 21st century, information is not difficult access, instead organizing, sharing, and collaborating become essential skills. Hence, ICT is not merely to portray information but to interact, share, and thus learn. ICT provides meaningful, absorbing media that makes teaching-learning more productive.

There are two main areas that we have to look at if a paradigm shift in the teaching process has to occur: the teacher's role of teaching and the teacher's role of helping the student learn. In the first one the teacher has to enhance teaching. Here, the teacher can ask himself or herself, 'How will ICT enhance my teaching?' The teacher should be aware of what lacunae exist in his/her teaching. The teacher should ask 'Do I need to be empowered?' 'What more can be done?' 'What is the most effective way of teaching?' 'How will more students benefit from my teaching?' 'Will ICT help me?'

The second role of the teacher: helping the student learn.

The Internet is full of information, textbooks are bursting with information. But this information can become true knowledge only when the teacher makes it meaningful. Here the teacher can use multimedia to make topics more comprehensible.

Think of a teacher showing large number of different flowers while reading out a poem on flowers, or teaching about the parts of a flower. Talking about the freedom struggle is one thing and seeing a two minute video on the same topic is altogether different. Preaching about rain water harvesting and showing a clipping while teaching is different. Showing how bunding is done, how crude oil is refined, gives students the correct idea. Instead of boring the students with a decade old chart on the respiratory system, showing a 1.5 minute video during teaching takes the students to a different level of understanding. Listening to the voice of Rabindranath Tagore while reading his stories, poems will help the students associate with the author. The entire teaching-learning process gets a boost with the appropriate use of ICT. It should be used to fill in the inadequacies that the teacher is facing. The problem of large numbers, students not showing interest can be tackled to some extent. Can use of ICT make teaching more meaningful, get rid of rote memorizing?

ICT - A SOLUTION FOR THE IMPROVEMENT OF THE EXPERTISE OF TEACHER

The teacher needs to be fully aware of the fact that students can find information, they need proper instructions, they need scope for creativity, and expectations of the teacher bring forth performance

ICT enabled distance education is poised to rule the world. This would not only strengthen the elementary education needs of the country but would also increase the dependence of education on ICT. Technological development always warrants transition to newer technologies by jeopardizing the cost effectiveness of the distance education programs. Retaining the already existing technologies for a considerable period of time and subsequently embracing new technologies should have fine balancing, so as to improve also the quality of education. India is one among the few countries in the world, which has not allowed the expenditure on education to shrink over the years. The increase in expenditure on elementary education alone over the last four Five Year Plan periods has been more than the increase in expenditure on education as a whole. With all the inputs around, there is only hope for enhancing the quality of education at the elementary stage.

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 (ICT). 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.

This technology invites learners to be more independent and the curricula to be more dynamic. Teachers need to complement their content and pedagogy expertise by utilizing online facilities. Use of ICT effectively requires a change in classroom practice rather than mere acquisition of technical skills. Teachers need to familiarize themselves with possibilities approaches and application in the use of ICT, the facilitation of teaching learning. These technologies along with overhead projector and computer projections have the potential to make teaching. Learning and training processes more efficient and cost effective. It has opened up new possibilities of reaching out to the still un-reached disadvantaged groups and children with special needs.

The educational channels need to be organized, strengthened and utilized for creating awareness strengthened, and utilized for creating awareness, providing instructions and offering solutions of problems faced by learners of specific age. The increasing use of technologies has brought changes in the modes and methods of instructional processes which are becoming more learner-centered. New interactive relationships among teachers, learners and technologies are emerging

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 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.

As technology has created change in all aspects to society, it is also changing our expectations of what student must learn in order to function in the new world economy. Students will have to learn to navigate through large amounts of information, to analyze to make decisions and to master new knowledge domains in an increasingly technological society. They will need to be lifelong learners, collaborating with others in accomplishment complex task, and effectively using different systems for representing and communication knowledge to other. A shift from teacher centered instruction to learner centered instruction is needed to enable students to acquire the new 21st century knowledge and skills.

PARADIGM SHIFT THROUGH ICT IN TEACHER EDUCATION.

1. Teacher centric, stable designs learner-centre, flexible disigns
2. Teachers direction & decisions Learner authonomy
3. Passive reception in learning active participation in learning
4. Learning within the four walls learning in the wider social of classroom context
5. Knowledge as given and fixed knowledge as it evolves & is

6. Disciplinary focus
7. Liner exposure Multiple & divergent exposure

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. Inventive Thinking Intellectual capital ability of manage complexity courtesy.
3. Effective communication-social and personal skills-Teaming collaborative and interpersonal skills.

Teacher educators and teachers education institutions should help the student teachers to grow along with the present technological modifications.

S. No.	Different Teacher Education Stage	Objective	Role of ICT
1.	At Primary level	All round development new observational skills. Habit formation.	Establishment learning resource center "equipped with audio with audio-visual material like T.V.VCR side projectors of animals fruits insects flowers.
2.	At secondary level	Integrated & holistic approach; inculcating social cultural aesthetic. Moral & scientific values responsive & transparent evaluation	Multicultural setting, training of cooperation among teachers. Skill training in undertaking action research online conference. Seminars & expert discussions
3.	At higher level	Empowering teachers to guide learning for self study, reference skills, critical thinking adopting various methods such as project work & tutorials. Research attitude.	Electronic information resources E-journals. E-conferences. Bulletin board services. Global classroom. E-libraries
4.	At in services training level	To know existing educational policies curricula & syllabi skills for effective transaction of curriculum. New educational development	Audio-video teleconferencing. Connectively with the concerned agencies like. NCERT SCERT NCTE UGC, CABE. Etc. Training of computer & higher learning opportunities though correspondence.

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.

Rapid changes in technology will ensure that ICT will proliferate in the classroom. 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 will also require a modification of the role of the teacher, who in addition to classroom teaching will have other skills and responsibilities. Many will become specialists in the use of distributed learning techniques, the design and development of shared working spaces and resources, and virtual guides for students who use electronic media. Ultimately, the use of ICT will enhance the learning experiences for children, helping them to think and communicate creatively. ICT will also prepare our children for successful lives and careers in an increasingly technological world.

The present generation is a multimedia generation. It is not their fault. They are numbed by too much of information and easy access to that information. How then can we expect our students to sit and listen to lifeless sermons in class. The information that is given in the classroom is redundant and presented in boring manner. NGC, Discovery, Fox History can take one to places and time in minutes. They show so much of the present and the past far and wide that one seems to learn unknowingly. One search on Google and lo and behold! The information at your fingertips will be difficult to assimilate. How does one harness this gargantuan accessibility of information? How to make students use it appropriately and avoid brazen plagiarism? Vague expectations, lack of innovation, poor scope for creativity make learning dull. Mere use of computer or Internet doesn't improve the learning output.

The process should be as follows:

Step one: What are the problems in schools, classrooms, exclusively related to teaching-learning? Identify them. Large numbers? Lack of interest? Many drop outs? Learning disability?

Step two: What is being done about these problems? Can use of ICT help? Try making lectures, classes more technology laden to bring a difference. Observe the difference in the classes.

Step three: What are the requirements of the teacher to do a better job? Do the teachers feel that use of ICT to help them improve their teaching?

Step four: Are the teachers and students equipped with ICT skills?

Although ICT offers the opportunity to construct powerful learning experiences, it is pedagogically neutral. That is, ICT can be used in support of traditional teaching methodologies like the large group lecture, student note taking, and examinations. Teachers can use a computer and projector to show slides to illustrate a lecture, students can use laptops to take notes during the lecture, and multiple choice quizzes about the content of the lecture can be put on a website. How these new ICT tools and resources will be used is a human decision, not inherent in the technologies themselves.

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.

ICT has the potential to be used as a supportive educational tool enabling students' learning by doing. ICT can make it possible for teachers to engage students in self-paced, self-directed problem-based or constructivist learning experiences; and also test student learning in new, interactive, and engaging ways that may better assess their understanding of the content.

REFERENCES

1. Ahmed, S. and Singh, M. (2010) Multimedia in Teacher Education Empowering Accessible, Flexible and innovative learning, Shikshak - Shiksha Shodh Patrika Vol. (04) No (1) pp. 32-33.
2. Ashton, P. (1985). Motivation and The Teacher's Sense of Efficacy. In C. Ames, and R. Ames (Eds.), Research on motivation in education, 2, pp. 141-171. Orlando, FL: Academic Press Inc.
3. Bandalos, D. and Benson, J.(1990). "Testing the factor structure invariance of a computer attitude scale over two grouping conditions", Educational Psychology Measurement, 50, pp. 49-60.
4. Bandura, A. (1982). "Self-efficacy Mechanisms in Human Agency. American Psychologist", 37, pp. 122-147.
5. Barr, A.S. (1958) Characteristics of Successful Teachers Phil Phi. Delta Kappa.

6. Bhatt, Manoj J., (2012), ICT and Education: A New Vision, Research Expo International Multidisciplinary Research Journal, Vol.-II, Issue – 1.
7. Fay, A. & Mayer, R. (1994). Benefits of Teaching Design Skills before Teaching Logo Computer Programming: Evidence for Syntax-Independent Learning. *Journal of Educational Computing Research*, 11 (3), pp. 187-210.
8. Ferguson, D. L. (1992). Computers in Teaching and Learning: An Interpretation of Current Practices and Suggestions for Future Directions. In E. Scalon & T.O'Shea (Eds.), *New Directions in Educational Technology*. Germany: Springer-Verlag/NATO ASI Series, Series F: Computers and Systems Sciences, 96, pp. 33-50.
9. Gatewood, T. E., & Conrad, S. H. (1997). Is your school's technology up-to-date? A practical guide for assessing technology in elementary schools. *Childhood Education*, 73(4): pp. 249-251.
10. Hall, A. K. (1982). Computer - based Education. In H. E. Mitzel et al. (Eds.), *Encyclopaedia of Educational Research*. New York: The Free Press, 5th Edition: pp. 353-367.
11. Kothari. D.S. "Education Commission (1964-1966) Ministry of Equation, new Delhi.
12. National Curriculum Framework 2005.
13. Paliwal A.K. (2006).Faculty development in teacher education perceptions and changing context, sovinier 7th National conference MATE pp 10-11.
14. Reed, W.M., & Overbaugh, R.C. (1993). The effects of prior experience and instructional format on teacher education students' computer anxiety and performance. *Computers in the Schools*, 9(2/3), pp. 75-89.
15. Rohner, D. J., & Simonson, M. R. (1981). Development of an index of computer anxiety. Paper presented at the annual convention of the Association of Educational Communications and Technology, Philadelphia, PA.
16. Russon, A. E., Josefowitz, N., & Edmonds, C. V. (1994). Making computer instruction accessible: Familiar analogies for female novices. *Computers in Human Behavior*, 10(2), pp. 175-187.
17. Schunk, D. H. (1981). Modeling and Attributional Effects on Children's Achievement: A Self-Efficacy Analysis. *Journal of Educational Psychology*, 73, pp. 93-105.
18. Takwal, R. (2003) Problems and Issues faced by Indian Education system UGC Golden Jubilee Lecture series. pp.5.
19. Venna S.K (2010) Teacher Education some qualitative consideration, *Shikshak - Shiksha Shodh Patrika*, 4 (1), pp. 10.
20. Woodrow, J. (1990) Locus of Control and student teacher computer attitudes. *Computers Education*, 14, 4, pp. 421-432