Integration of ICT in Teacher Education

[a]Diptansu Bhusan Pati, [b]Srutirupa Panda
[a]Ph.D Research Scholar, North Odisha University, India
[b]Lecturer in Education, NKC College of Teacher Education, Angul, Odisha, India

Abstract

It is a fact that most of the advances and revolutionary changes with respect to social, political, educational, economical, scientific, industrial field brought in this 21st century are due to important contributions of Information and communication technology (ICT) that has been worked as a causal force for achieving progress and success for the nation. The significant role ICT in every field of work including education for bringing out excellence has been well accepted by each and every one. It has played pivotal role in achieving major goal and objectives in the each field of education. In recent times teacher education system is facing different challenges related to preparation of competent teachers and quality teaching. One of the approaches for the quality enrichment in teacher education system can be practiced by adopting ICT as a tool for teaching and learning. Hence ICT should be integrated with instruction in both pre- and in-service teacher education programme

KEYWORDS: Integration, ICT, Teacher Education

Introduction

Teachers are the pillars of our society. Teacher education of country determines the quality of teachers and their effectiveness. Teacher education institutions implement the tasks of teacher training and education through various national, state and private organizations both through face to face and distance mode. Recently more emphasis is given on ICT integrated teacher education in order to make it more effective, student friendly, attractive and qualitative.

ICT stands for Information communication Technology. According to Tinio (2002) ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information."These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony According to CIO Midmarket, ICT (information and communications technology - or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. Information and communication technologies in education deal with the use of Information and Communication Technologies (ICTs) within educational technology. ICT covers any product that will store, retrieve, manipulate, transmit or

receive information electronically in a digital form. For example, personal computers, digital television, email. So ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. Importantly, it is also concerned with the way these different uses can work with each other.

'Information and Communication Technology' refers to, the technology used to handle information and to aid communication. The phase was adopted by the new National Curriculum documents for UK in 2000. Rather than simply IT, ICT shows the importance of communications integrated with computers Information and communication Technology constitutes 'Information Technology' and Communication Technology both of which are development at a very high speed.

It is helpful in

- Gathering and identifying information
- Classifying and organizing
- Summarizing and synthesizing
- Analyzing and evaluation
- Speculating predicting

Objectives of ICT integration in Teacher Education

Main objectives of integrating ICT in teacher education are:

 • Improve the quality and consistency of teacher education through standards, measurement accountability and increased technology resources

. • Improve the training of new teachers in the use of technology.

 • Ensure that every teacher knows how to use data to personalize instruction. This is marked by the ability to interpret data to understand student progress challenges.

• Improve the training of new teachers in the use of technology.

• Drive daily decisions and design instructional interventions to customize instruction for every student's unique needs.

• ICT is going to play a vital role in bringing about qualitative change in every aspect of our life in general and that of governance of education.

Benefits of ICT in Teacher Education

Benefits of ICT integration in teacher education are

- Effective and qualitative pre-service and in-Service teachers education.
- ICT helps teachers to interact with students.
- It helps them in preparation their teaching, provide feedback.
- ICT also helps teachers to access with institutions and Universities, NCERT, NAAC NCTE and UGC etc.

- It also helps in effective use of ICT software and hardware for teaching – learning process. It helps in improve Teaching skill, helps in innovative Teaching.
- It helps in effectiveness of classroom. It also helps in improving professional Development and Educational management as well as enhances Active Learning of teacher Trainees.
- It is now replacing the ancient technology. As we know now-a day's students are always have competitive mind. So teacher must have the knowledge of the subject. This can be done through ICT.
- ICT helps teachers in preparation for teaching. In order to introduce ICT in pre-service teacher education different methods and strategies are applied.
- Different tools are used such as word processing, Database, Spreadsheet, internet etc.
- Various technology based plans are used to help the teachers for their practice teaching. ICT prepares teacher for the use of their skills in the real classroom situation and also make students for their future occupation and social life. ICT used as an „assisting tool" for example while making assignments, communicating, collecting data & documentation, and conducting research.
- Typically, ICT is used independently from the subject matter. ICT as a medium for teaching and learning.
- It is a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. It appears in many different forms, such as drill and practice exercises, in simulations and educational networks. ICT as a popular tool for organisation and management in Institutions.
- Teachers must provide technological support to learn using motion picture, animation, simulation training which helped student teachers to give model presentation. If the teacher is highly equipped with technology, the student will also be equipped with technology.
- It removes the traditional method of teaching and prepare teacher to apply modern method of teaching.
- ICT is plays an important role in student evaluation.
- ICT is store house of educational institution because all educational information can safely store through ICT. ICT helps Teacher to communicate properly with their students. So ICT bridge the gap between teacher and students.
- ICT helps Teacher to pass information to students within a very little time.
- ICT helps Teacher to design educational environment. ICT helps Teacher to identify creative child in educational institute.
- ICT helps Teacher to motivate students and growing interest in learning.
- ICT helps Teacher for organizational preconditions (vision, policy and culture). It is also helps Teacher for their personnel support (knowledge, attitude, skills). ICT helpful for technical preconditions (infrastructure).
- ICT helpful for designed learning situations which are needed for both vocational education and the training of future teachers (in the teacher training institutes). Teacher training institutes can develop their curriculum using ICT.

- With the help of ICT Teacher training institutes can develop communication network. Teachers learn most from their own networks (learning from others) with the help of ITC

Approaches of ICT Integration in Teacher Education

Use of ICT in Teacher Education around the world is being approached in a number of different ways with varying degree of success. These points were subsequently described, refined and merged into following points:

A. ICT Skills Development Approach : This approach include training on ICT where prospective teachers become expert of ICT based skills.

B. ICT Pedagogy Approach: Emphasis is on integration ICT skills in a respective subject pedagogy. This approach is useful to the extent that the skills enhance ICT literacy skills and the underlying pedagogy allows students to further develop and maintain these skills in the context of designing classroom – based resource.

C. Subject - Specific Approach: This approach has an emphasis on teacher training in how to use ICT in the classroom. It addresses issues such as selecting appropriate ICT tools and supporting students in the use of these tools using ICT to promote learning activities, developing new methods of facilitating learning and evaluating student performance.

D. Practice Driven Approach Here emphasis is on providing exposure to the use of ICT in practice aspects of Teacher training. Focus is on developing lesson and assignments. Using ICT and implementing it in their work experience at various levels provides students an opportunity to assess the facilities available at their school and effectively se their own skills.

Strategies for Integrating ICT in Teacher Education

Different Strategies for integrating ICT in Teacher Education are

- Learning Management System for Providing adequate infrastructure and technical support.
- Using ICT in all subjects and pedagogy.
- Applying new Pre-service teacher Education curriculum.
- By using application software, using multimedia, Internet e-mail, communities, understanding system software.

ICT based Skills and Competencies for Teachers

 • ICT is a powerful new development with ambitious role in Teacher Education. Digital and Internet based multimedia transforms the present trend in the field.

• Evaluating and selecting appropriate software for a particular subject and per student needs.

• Generating printed document like student assignment, newsletters, communication etc. and utilizing a variety of applications software like word processing and desktop publishing.

• Using data management tool for efficiently managing learning.

• Using the internet to support professional development including locating professional organizations, communicating with other teachers electronically and participating in online professional development workshops and seminars.

• Develops the ability of self-learning and interacting individually as the learner affairs vast experiences effectively, efficiently and expeditiously.

• ICT facilitates the learner to have control on lesson, pace the sequence, content, feedback which in turn enhances the efficiency of learning.

• It helps in transforming the definition of literacy, learning and knowledge; a definition that increasing includes multimedia digital literacy

Revolution Caused by ICT in the Realm of Teacher Education

• ICT has changed the role of teacher from instructor to a constructor, facilitator a coach and creator of learning.

• It has the advantage of ease of revision and introduction of new course in the curriculum in response to emerging demand.

• It helps teachers working in remote locations as they can access on line libraries and current researches which significantly enhance quality teaching and up gradation of knowledge.

• The concept of e-learning is an emphasis learning by doing or interactivity.

• It helps teachers organizing and using time management system in their academic work.

• ICT based programmes overcome a teacher isolation by active and co operative participation of students.

• ICT has reduced the gap between the real and virtual training.

• It offers mass customization in the field of teacher education because it helps the teachers to accommodate individual difference in student goals, learning styles and abilities while providing improved, convincible situation for both students as well as faculty on an anytime, anyplace basis.

Conclusion

ICT can provide many opportunities for teacher education system to grow and make itself qualitative through its various tools and techniques. However it require continuous need analysis and research activities on the part of teacher, students and administrators, educational planners to   explore means and ways to integrate teacher education

curriculum and ICT. ICT integrated teacher education can enhance knowledge, values, skills , competencies of prospective teachers and in service teachers systematic, excellent and updated.

References

[1] Albirini, A.A. (2006). Teachers attitudes toward information and communication technologies: the cause of Syrian EFL teachers. Journal of Computers and Education, 47, 373- 398.

[2] Bowes (2003). The emerging repertoire demand of teacher of the future: surviving the transition, retrieved, september1, 2004, from http://crpit.com/confpapers/CRPITV23Bowes. pdf.

[3] Fu, J.S. (2013). ICT in Education: A Critical Literature Review and its Implication. International Journal of Education and Development using information and communication Technology (IJEDICT), 2013, Vol. 9, Issue 1,pp. 112-125. National Institution of Education, Singapore.

[4] Haddad, W.D.(2003), Is instructional technology a must for learning? Techknowlogi.org. retrieved, September23, 2004 from http://www.techknowlogia.org/TKL active pages2/CurrentArticles/main.asp? Issue Number19&FileType=HTML&Article ID=455.

[5] Pacey,L.(1999). Integration of information and communication technologies (ICTs) thought teacher professional development: comparative analysis of issues and trends in seven APEC economies, Canada: Judy Roberts & Associates Inc.

[6] Ronald C and Crawford T.(june, 2008),Campaigning Against Conflict, ACP ICT Update Bulletin,43.

[7] Takwal, R. (2003) Problem and Issues faced by Indian Education System UGC Golden Jubilee Lecture series. pp. 5.