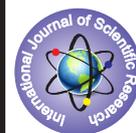


# INFORMATION AND COMMUNICATION TECHNOLOGY



## Education

**KEYWORDS:** ICT, Teacher Education

**Dr. Vandana Dua**

Professor, Tania University, Sriganganagar (Rajasthan)

**Dr. Ankur Dua**

English Teacher, Govt. Middle School, Kot Kapura (Punjab)

### ABSTRACT

At Present a new era has evolved in the education sector by means of ICT. Different ICTs are now set to become instrumental to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by among others, helping make teaching and learning into an engaging, active process connected to real life. The application and exposure to and development of ICTs fundamentally change the way education is conceived and delivered to students. ICTs are enablers that optimize student- centered pedagogical methods. The Emerging Technologies are the major factor producing changes in education and Shaping the global economy. Effective Education requires competent teachers who use this technology in their teaching learning process and aware of latest innovations, researches, policies and experiences in the field of education. Technology is a tool that can be used in many ways to enhance learning. The rapid development of technology makes it possible for almost everyone to Access computing resources. These types of resources include special hardware and software that allows individuals to make use of ICT. Due to its easy accessibility this means of education has become very popular all over the world. Distance education has got a thrust after the evolution of ICT- based education system. This paper intends to give an idea about ICT-based higher education all over the globe. Finally, it analyses the responses from different user groups to query about the current status of the ICT-based higher education system. This article discusses the roles of ICT in education. Information communication technologies (ICT) at present are influencing every aspect of human life. They are playing salient roles in work places, business, education and entertainment. Moreover, many people recognize ICTs as catalysts for change. Change in working conditions, handling and exchanging information, teaching methods, learning approaches, scientific research and in accessing information. Therefore, this article discuss the roles of ICTs, the promises, limitations and key challenges of integration to education systems. The review attempts in answering the following questions : What are the benefits of ICTs in education? , What are the existing promises of ICT use in education systems of some developing countries? , What are the limitations and key challenges of ICTs integration to education systems? The review concludes that regardless of all the limitations characterizing it, ICT benefits education systems to provide quality education in alignment with constructivism which is a contemporary paradigm of learning.

### Introduction

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. ICTs are often spoken of in a particular context, such as ICTs in education, health care, or libraries. Thus ICT is the implementation of different branches of technology in information and communication processing. It is the use of science and technology for the purpose of collecting, storing, processing and transmitting information. It has become an essential support tools for the activities carried out by researches. ICT concerned with communication, manipulation of information, networking, data storage, transmission of data, audio and visual.

The quality of teachers and their continuing professional education and training remain central to the achievement of quality education. ICT professional development is seen as a vehicle to enable transformative change in teachers' practice. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other fields. For education to reap the Dull benefits of ICTs in learning, it is essential that pre- service and in-service teachers have basic ICT skills and competencies.

### It requires skills like

- Creativity
- Flexibility
- Logistic skills (e.g. for assigning work- and study places and grouping students)
- Skills for working in projects
- Administrative and organisational skills
- Collaborating skills.

Use of ICT in education develops higher order skills such as collaborating across time and place and solving complex real world problems. It improves the perception and understanding of the

world of the student. Thus ICT can be used to prepare the workforce for the information society and the new global economy. Institutions must provide "Learning to Learn" i.e. the acquisition of knowledge and skills that make possible continuous learning over the lifetime. Furthermore, the interviewed teachers especially underline the teachers' attitude concerning the use of ICT in education. New things are intimidating and are causing resistance. The teachers point out a 'professional attitude'. Important features of this attitude are being accessible for innovations in general and of ICT in particular . The term is somewhat more common outside of the United States. According to the European Commission, the importance of ICTs lies less in the technology itself than in its ability to create greater access to information and communication in underserved populations. Many countries around the world have established organizations for the promotion of ICTs, because it is feared that unless less technologically advanced areas have a chance to catch up, the increasing technological advances in developed nations will only serve to exacerbate the already-existing economic gap between technological "have" and "have not" areas.

ICT is about the new ways in which we can communicate, inquire, make decisions and solve problems. ICT can be used as a tool in the process of education in the following ways:

- **Information tool** : It provides vast amount of data in various formats such as Audio, Video, documents.
- **Situating tool** : It creates situations which the student experiences in real life.
- **Constructive tool** : To manipulate the data and generate analysis.
- **Communicative tool** : it can be used to remove communication barriers such as that of space and time.

### Objectives of ICT

- To acquaint trainees with different parts of computer system and

their functions

- To develop vocabulary of ICT among teacher trainers
- To develop competency among teachers trainees in use of offline electronic resources and online resources
- To encourage teacher trainees in using ICT for improving classroom teaching
- To create general awareness among teacher trainees about ICT and its use in teaching learning process.

**Technology used for ICT :** ICT for this purpose makes use of two types of techniques :

- Technology for storage and process of information
- Technology for transmission of information

So, two types of technologies employed in ICT are :

- Computer technology
- Tele communications technology

So these two technologies are useful for the proper storage, processing, retrieval of information. The main three components tier the development of technology of information :

- Effective means for storing information
- Effective mechanism to manipulate scan and search such stored information
- Effective facilities for cheap and rapid transmission of information to the user.

#### Benefits:

- **Easy to access course material :** Course material on a website allows learner to study at a time and location preferred by a learner and one can get study material quickly.
- **Students motivation :** Students usually learn more in less time when receiving computer based instructions. Students are more motivated to learn when they are interested in subject matter, which can be enhanced by using technologies in the classroom and targeting the need for screens and digital.
- **More opportunities for extended learning :** Along with classroom and school learning, student can use their home computers and internet to conduct the research, participate in social media, E-mail, play educational games and stream video's, certain online academies which can help in enhancing and extending.
- **Wide participation :** Learning material can be used for long distance learning and can be accessible to wider audience.
- **Improved student's concept :** Concept clarity is enhanced and long lasting with ICT.
- **Break monotony and bring positive change :** Traditional Teaching methods are monotonous and bore. The paper and black board based teaching is not effective and result oriented. But ICT in education brings quality improvement in all its aspects.

No doubt, ICT in education improved quality of all its aspects but ICT in curriculum is not so easy. It is very complex, complicated, challenging and multifaceted process. Actually it not only require technology while pedagogy, curriculum and teacher's attitude. ICT no doubt helps in improving learning and makes learning long lasting but for its best results teacher should have the qualities.

#### Teacher's Qualities to Use ICT in Education Requires:

- The teacher should himself is competent about using ICT.
- She/ he should be confident enough.
- Teacher himself is convinced of what ICT has to offer to education.
- Knows about the effectiveness of his/ her teaching with ICT.

- She/ he should realize the potential of ICT tools.
- Should not go after or think its limitations like about the expense difficulties, and the amount of time needed to incorporate ICT into teaching practice.
- Teacher should ensure materials and software meet the teaching and learning outcome of curriculum.

It is important to be noted that technology cannot and should not replace the teacher. Teachers must learn and trained to choose technology which aid their teaching, rather than designing lessons to fit the available technology. ICT must be integrated with curriculum, pedagogy and field experience to model what teachers must use in the classroom.

#### Role of ICT in Teacher Education :

- Useful for teachers:
  - a. Acquaintance with information
  - b. Self learning material for students
  - c. Relation of the teaching learning objectives
- Useful for the counselor
  - a. Educational, vocational and personal guidance
  - b. Counselling with the help of recorded electronic devices
- Useful for educational administration \$4. planners
- Useful to the educational researchers
- Useful for students

#### Conclusion

Thus, it can be concluded that ICT in education can be achieved if our government provides adequate and proper infrastructure facilities to the educational institutions. The state education department should give proper importance to the professional development of teachers. These departments can organize discussion, seminars and workshops to enhance the quality in education. Finally, more attention should be paid to specific roles of ICT in offering multimedia simulations of good teaching practices, delivering individualized training course helping overcome teachers' isolation, connecting individual teachers to a large teaching community on a continuous basis and promoting teacher-to-teacher collaboration.

#### References

1. Bhowrick, D. (2014) : ICT in education in India, Edutracks. October. 2010, Vol. 14, No. XXXII, No.1 (40-49).
2. Bhatia, R.L and A huja, B.N. (2004). Educational Technology, Surjit Publications, Delhi.
3. Walia, J.S (2013). Educational Technology.
4. Dash, K.M. (2000). ICT in teacher Development. Delhi. Neelkamal Publications.
5. Pandey, V.C. (2005). Framework of information communication technology and teacher education. Delhi. Isha books.
6. <http://en.m.wikibooks.org>.
7. <http://www.academic.edu>
8. [www.ictinedtoolkit.org](http://www.ictinedtoolkit.org)
9. <http://www.educationict.org.uk/>