



ORIGINAL RESEARCH PAPER

Education

ROLE OF ICT ON THE TEACHING AND LEARNING PROCESS

KEY WORDS:

Neha Gupta

Assistant Professor In Teaching Of Mathematics, Education Department, Doaba College

ABSTRACT

ICT stands for Information and Communication Technology. ICT becomes indispensable of our lives for last few decades which affects individual life as well as our society. It has changed many aspects of the lives, which caused to rethink roles, teaching and visions of educational institutions, administrators and teachers. Teacher use ICT to make teaching and learning effective and interesting. In the modern era, education demands more knowledge of ICT and skills to use ICT for teacher in teaching-learning process. This paper focuses on the role of ICT in 21st century's teacher education. Now-a-days ICT's are transforming schools and classrooms a new look and also provide more facilities to teachers and students. ICT also helps teachers, students and parents to come together. So, the knowledge of ICT is very much necessary for both pre-service as well as in-service teachers, which helps teachers to integrate technology in classroom teaching.

INTRODUCTION

Today's age is the age of Information and Technology (IT). Learning through ICT is also called e-learning. ICT is an indispensable part of the modern world. With the use of ICT, teachers bring quality education. In 1998, UNESCO World Education report refers about student and teachers must have sufficient access to improve digital technology and the internet in their classrooms, schools and teacher educational institutional. Teachers must have the knowledge and skills to use new digital tools to help all students to achieve high academic standard. According to UNESCO (2002), "ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters". ICT is an acronym, that stands for Information Communication Technologies, that includes all technologies for the manipulation and communication of information (Swati Desai, 2010). Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology (Anu Sharma et al.,2011). ICT is one of the major factors for producing the rapid changes in our society. It can change the nature of education and role of students and teachers in teaching learning process.(Baishakhi Bhattacharjee and Kamal Deb,2016). ICT enables a teacher to reach out widely efficiently and effectively. It helps teachers and institutions to be more modern and dynamic. (Sexana et al.,2017).

AIMS AND OBJECTIVES OF ICT IN EDUCATION

The following are the aims and objectives of ICT implementation in education:

- To develop distance education with national contents.
- To promote and facilitates the relationship between human and the environment.
- To promote technology literacy of all citizens, especially for students.
- To increase equal opportunities to obtain education and information.
- To implement the principles of long lasting learning.
- To increase a variety of educational services and methods.
- To share experiences throughout blogs to others from all over the world.
- To provide prospects and trends of integrating information and communication technology into general education activities,

ROLE OF ICT IN 21ST CENTURY'S TEACHING AND LEARNING

Role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed issues in modern education policy, if ICT is properly used it holds great promise to improve teaching and learning in addition to shaping work force opportunities. Broadening the availability of quality education materials in India, several initiatives like National Programme on Technology Enhanced Learning (NPTEL), Multimedia Educational Resource for Learning and Online Teaching (MERLOT) seek to create quality digital content for different levels of education (Jyoti

Narayan Patra, 2014). The main role of ICT in education are (Swati Desai, 2010 and Baishakhi Bhattacharjee et al.,2016):

- To develop variety of educational services and medium.
- To develop a system of collecting and disseminating educational information.
- Helping in improving innovative teaching skills and makes classroom teaching effective.
- Acts as an assisting tool for teaching and learning itself.
- ICT helps teachers to motivate students and develop interest in learning.
- ICT is store house of educational institution because all educational information can safely store through ICT.
- ICT helps teachers to communicate properly with their students. So ICT bridge the gap between teacher and students and plays an important role in student evaluation.
- ICT helps teachers in both pre-service and in-service teachers training.
- It also helps in improving professional development and educational management as well as enhances active learning of teacher trainees.
- It removes the traditional method of teaching and prepare teacher to apply modern method of teaching.
- ICT helps teacher to pass information to students within a very little time.
- With the help of ICT teacher training institutes can develop communication network.
- It also helps teacher for their personnel support like knowledge, attitude, skills etc.

ROLE OF ICT ON THE LEARNING ENVIRONMENT

ICT has the following impacts on learning environment:

Provide tools to increase student productivity: ICT has transformed teaching and learning processes from being highly teacher-dominated to student-centred, and that this transformation will result in increased learning gains for students, creating and allowing for opportunities for learners to develop their creativity, problem-solving abilities, informational reasoning skills, communication skills, and other higher-order thinking skills (Bhaurao, 2015).

Overcome physical disabilities: ICT provides many devices which are helpful to those who are physically handicapped. Modified keyboards and mouse-drivers may be used for severe handicapped students. For students who are not able to take notes during the course of the class, the system stores in a database lessons already taken for further studies and provides a more user friendly environment for blind students through audio interpretation of the course (Bingimlas, 2009), thus enhancing learning.

Active learning: According to Motamedi (undated), technology makes the students take an active role in learning instead of taking on a passive role of receiving information from the teacher. ICTs potentially offer increased possibilities for codification of

knowledge about teaching and innovation in teaching activities through being able to deliver learning and cognitive activities anywhere at any time (Larsen & Vincent-Lancrin, 2005).

Participation of students by motivation and challenge:

Computer system does provide the opportunity to create a wide range of interesting learning experiences as it makes learning, participatory and a social process supporting personal life goals and needs (McLoughlin and Lee, 2007).

Tailoring learning to the learner: It is not possible to provide each student with a teacher and for that teacher to design learning experiences for that student, but ICT provide software for both weak and intelligent student so that they can assess them according to their pace.

LIMITATIONS OF ICT IN EDUCATION

ICT not only provide facilities to the students but it has many disadvantages also which are as follows:

- The installation and maintenance of certain hardware and software makes the use of ICT much expensive.
- Sometimes misleading and not correct information is passed using ICT.
- Teacher resistance and lack of enthusiasm to use ICT in education may also be another limitation (Himanshu Kumar Sharma, 2015).
- Unless teachers develop some basic skills and willingness to experiment with students, ICT use in education is in a disadvantage (Brosnan, 2001).
- Certain modes of communication such as internet and mobiles are leading the students to wrong directions.
- In many researches, it is found that some teachers do not have proper clarity about the usage of technology.

CONCLUSION

Information and Communication Technology enables a teacher to make his/her teaching very interesting and effective. It helps a teacher in maintaining records of the students, compile a data bank of exam questions, updating daily lessons etc. It also helps the institutions to make their institute more dynamic and modern. It also helps the students to make their learning permanent. Thus, ICT has positive effect on teaching and learning.

REFERENCES

1. Sexana et al.,(2017). The Role and Impact of ICT in Improving the Quality of Education. *International Journal of Engineering Sciences and Research Technology*. Vol 6(3), pp. 501-503.
2. Jyoti Narayan Patra (2014). The Role of ICT in improving the Quality of School Education in India. *International Educational E-Journal*, Vol.III, Issue-II, Apr-May-June 2014, pp.15-156.
3. Swati Desai (2010), Role of Information Communication Technologies in Education. *Proceedings of the 4th National Conference: INDIA. Comuting for Nation Development*.
4. Anu Sharma, Kapil Gandhar and Seema,(2011), Role of ICT in the Process of Teaching and Learning. *Journal of Education and Practice*, Vol.,2,No. 5, pp. 1-6.
5. UNESCO (2002). *Information and Communication Technologies in Teacher Education, A planning Guide*. Paris: UNESCO.
6. Baishakhi Bhattarjee and Komal Deb (2016), Role of ICT in 21st Century's Teacher Education. *International Journal of Education and Information Studies*. Vol6, Number 1, pp. 1-6.
7. Himanshu Kumar Sharma (August 2015), *International Journal on Computer Science and Engineering (IJCSSE)*, ISSN: 0975-3397. Vol. 7, No. 8.
8. Amalnik, M.S., Moayyedi, M.K. and Mirzaei, M. (2015). Expert System Approach for CAD/CAM Integration & Optimization based on International Standard (STEP) and Computer based Concurrent Engineering. *International Journal of Computers & Technology*, Vol. 14, No. 5, 5695-5706.
9. Balanskat A., Blamire, R. And Kefala, S. (2006). The ICT Impact Report: A review of studies of ICT impact on schools in Europe. *European Schoolnet*, extracted from http://colccti.colfinder.org/sites/default/files/ict_impact_report_0.pdf
10. Bhaurao, P. B. (2015). Role of ICT in Indian digital education system. *Indian Streams Research Journal*, 5(2), 1-5.
11. Bingimlas, K.A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of literature. *Eurasia Journal of Mathematics, Science and Technology Education*, 5(3), 235-245.
12. Cradler, J. (2002). Finding research –based information about technology in teaching and learning. *Learning and Leading with Technology*, 29(7), 46-49.
13. Cradler, J. And Bridgforth, E. (2002). Recent research on the effects of technology on teaching and learning, extracted from <http://www.wested.org/techpolicy/research.html>
14. Larsen, K. And Vincent-Lancrin, S. (2005). The impact of ICT on tertiary education: Advances and promises. A paper presented at the Organisation for Economic Co-operation and Development (OECD) /NSF/JU. Michigan Conference "Advancing Knowledge and the Knowledge Economy" 10-11 January 2005, Washington DC
15. McLoughlin, C. & Lee, M.J.W. (2007). Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era. In *ICT: Providing choices for learners and learning*. *Proceedings ascilite Singapore 2007*.

- <http://www.ascilite.org.au/conferences/singapore07/procs/mcloughlin.pdf>
16. Motamedi, V.(undated). Integration of technology in our classrooms: A divisive issue, extracted from <http://www.nyu.edu/classes/keefe/waoe/motamedi.pdf>
 17. Stella Nwigboand and Dr. Madhu B.K.(2016). Impact of ICT on the Teaching and Learning Process. *IOSR Journal of Mobile Computing & Application (IOSR-JMCA)*. Volume 3., Issue 2,pp. 01-07.5