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ARTICLE

Information and Communication Technology Tools in the Teaching Learning Process

\* **Dr J D Singh**, Senior Faculty  
GV (PG) College of Education (CTE)  
Sangaria-335063, Rajasthan  
Email: drjdsingh@gmail.com, Cell: 9414577875

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### Abstract

*In the present education system, ICT has become an integral part of today's teaching learning process. Information and Communication Technology (ICT) can lead to an improved student learning and better teaching methods. It has been used in various aspects of teaching learning process in education system. Effective use of technology can motivate learners, make our classes more dynamic and interesting and renew teacher enthusiasm as they learn new skills and techniques. The role of ICT in higher education is becoming more and more important and importance will continue to grow and develop in 21<sup>st</sup> century. The adoption and use of ICTs in education have a positive impact on the teaching, learning and research. ICT also allows for the creation of digital resources such as digital libraries where students, teachers and professionals can assess research material and course material from any place at any time. Therefore, knowledge of ICT is very important to development and increase skills and competencies of a modern teacher. So keeping in view the teaching learning process in education system, this article highlights the ICTs that are available at the present time to teachers to support their teaching strategies.*

### Introduction

Education is becoming a major source of competitive advantage when global economical and technological competition is growing sharper. With the passage of time, a lot of changes have taken place in the field of education technology. Good education is seen as a stepping stone to high flying career in life. UNESCO defines ICT as technologies that help to create, propagate and exchange information. This definition includes various tools of communication/multimedia e.g. television, phone, satellite systems, computer network, associate services and equipments such as e-mail, videoconferencing etc. Demand for skilled and competent labour is ever increasing in the contemporary globalized society. The

role of ICT in the education and society is becoming more and more important and this importance will continue to grow and develop in the 21<sup>st</sup> century. ICT contribute in education in many ways such as a collaborative tool, ICT as a tool to support traditional subjects, ICT as an administrative tool and many more. Teachers use ICT for making teaching learning process easy and interesting, A competent teacher has several skills and techniques for providing successful teaching. In modern science and technological societies, education demands more knowledge of teacher regarding ICT and skills to use ICT in teaching learning process. It can make the institution more efficient and productive. This knowledge is essential to develop new, sustainable faculty support solutions. It can be said that the knowledge of ICT will help teachers to know integrated technology with classroom teaching.

According to the researches, it is obvious that any benefit from this idea may lead to some major changes in teaching and learning processes as well. At the current practices of teaching learning pedagogy, mostly the educational institutions believe on constructivist approach of teaching learning process. Student's accesses knowledge and information through radio, television, cellular phones, computer, satellite systems, digital media, cable network, internet and social media i.e. YouTube, Facebook, Twitter, Whatsapp, LinkedIn, iGO, Telegram, WeChat, MySpace, and a host of other digital resources. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audio cassettes and CD ROMs have been used in education for different purposes. Universities are also rendering content through radio, TV and satellite. The use of Radio/TV for educational practices has been very popular in the past and is still used by IGNOU in India.

### **ICT and its Role in the Teaching-Learning Practices in Education**

Teaching is a very challenging and creative job. Students always expect something new to listen and do from their teachers in the classroom. It is responsibility of the teachers to make their classroom more creative, effective and interesting. ICT is a collection of technological tools and resources for further information, creation and distribution management. It means technologies which help us record, store process, retrieve, transfer and receive information. The mentions technologies are radio technologies (Radio/TV), computers, internet, laptops, cell phones, iPods, tablets, PDAs and many other digital devices and software applications such as podcasts, videos, e-books, interactive software and online interactive electronic

boards. These devices and applications can be used to provide education and training for teachers and students very well. ICT also allows for the creation of digital resources like digital libraries where students, teachers and professionals can assess research material and course material from any place at any time. In the other words, ICT is among the resources that teachers use to help facilitate student learning. The integration of ICT would not only help in promoting personal growth but also in developing knowledge-cum-wisdom based societies. Therefore to strengthen/advance this knowledge-driven growth, new technologies, skills and capabilities are needed in the twenty-first century.

### **Major Educational Practices relating to ICTs in Education**

My dear friends close your eyes and picture the two decades back classroom and prepare a list of the teaching learning material that was being used in classroom.

- A chalkboard? • Textbooks? • Radio/TV? • A video/audio cassette player?
- A slide/filmstrip projector? • An overhead projector? • A computer?

Now, prepare a list of the technological tools you would expect to see if you walked into the today's classroom. What would still be there? What would be new? Technology is changing the way we live at a faster rate every day. Today ICTs- including laptops wirelessly connected to the internet, personal digital assistants, low cost video cameras, and cell phones have become affordable, accessible and integrated in large sections of the society throughout the world. With current technologies, teachers need the freedom to select and mix-and-match digital tools to meet student needs and instructional goals. There are following common educational practices relating to ICTs for quality enhancement in this modern era of science and technology.

1. E-Learning
2. Blended Learning
3. Interactive Whiteboard
4. Mobile Learning
5. Ubiquitous Learning
6. Flipped Classroom Learning
7. Online Collaborative Learning

Let us know about the mentioned common technologies that are very important at present digital era.

**1. E-Learning:** Technology has transformed our life in many ways including the teaching learning pattern. Online learning has been made college education possible without having to be on campus or real classrooms. Online discussion technology also helps learners respond to questions, participate, and offer peer feedback to support the sharing the new information. Information can be shared over a network leading to creative engagement and knowledge sharing among group members. The use of ICT in education is not only improves classroom teaching learning process, but also provides the facility of e-learning.

**2. Blended Learning:** Introducing technology alone cannot change the teaching and learning process. Blended learning is the combination of multiple ways and content delivery mechanisms. Blended learning programmes often use e-textbooks to allow their students to have unlimited access to their learning material. They include classroom learning, online learning as well as one to one learning and their combination. Cost benefits aside, students say that they enjoy the benefits of blending both online and in-classroom learning styles. Blended learning is a student-centred learning approach in which students influence the content, activities, materials and pace of learning. This learning model places the students at the centre of the learning process.

**3. Interactive Whiteboard:** An interactive whiteboard is a classroom tool, also known as a smart board/electronic whiteboard. It is an interactive display in the format of a whiteboard that reacts to user input either directly or through other devices. It allows computer images to be displayed onto a board using a digital projector. The interactive whiteboard is a touch-screen LED display that is connected to a computer or other device. The instructor can manipulate the elements on the board by using his finger as a mouse, directly on the screen. This eliminates the need for a mouse, wireless clicker, or laser pointer. The benefits of using interactive whiteboards in the classroom affect both the students and teachers positively.

**4. Mobile Phone Learning/ M-Learning:** The new smart phones can be used as tools for learning just like laptops, notebooks and iPads that are already being allowed/ used in the classrooms. Cell phones are different from a computer lab filled with systems because the cell phone is personal technology. Smart phones are also being used to access computer files from remote locations. With the increased use of smart phones, educational institutions can easily approach students to make them aware about the courses. Tasks like administration,

sharing class notes, downloading lectures, instant messaging etc. have been made easy by a simple smart phone.

**5. Ubiquitous Learning /U-Learning:** Ubiquitous learning/ U-learning is a new learning paradigm. It is a combination of e-learning and m-learning. It is said to be an expansion of previous learning paradigms as we move from conventional learning to electronic learning (e-learning) and from e-learning to mobile learning (m-learning) now we are shifting to u-learning. In e-learning, learning is confined to single desk while in u-learning, it is very much flexible. In the u-learning mode/ system, is based on the educational activities, location and time of interactions. There are three types of learning modes- Synchronous, Asynchronous and hybrid mode. U-learning is a learning paradigm which takes place in a ubiquitous computing environment that enables learning the right thing at right place and time in the right way.

**6. Flipped Classroom Learning:** Flipping helps students of all abilities to excel. It reverses the traditional learning dynamics completely. Flipped classroom learning is an instructional strategy and type of blended learning that reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom. Blended learning brings together elements of both traditional and flipped classrooms. Flipped classroom is one of the most innovative methods of teaching that has evolved in the recent times.

**7. Online Collaborative Learning:** Collaborative learning is one of the teaching approach where students work in groups so as to understand concept, create a product or solve a problem. It is an e-learning approach where students are able to socially interact with other students, as well as teachers. Online collaborative learning (OCL) theory is a form of constructivist teaching that takes the form of instructor-led group learning online. In OCL, learners are encouraged to collaboratively solve problems through discourse instead of memorizing correct answers. Collaborative learning activities can include collaborative writing, study teams, joint problem solving, group projects, debates and other group activities.

## Conclusion

Educational systems around the world are under increasing pressure to use the new technologies to teach students the knowledge and skills they need in the twenty first century. The educational institutions have a great opportunity and responsibility to design their educational system leading to the society and nation. Online resources that can be

accessed from anywhere at any time from multiple devices are essential for supporting innovations in the teaching learning practices. The idea of interactive learning beyond the classroom, remote learning may really take off due to developing science and technology. With the advent of 4G and 5G networks in India, the online classroom will become a high definition reality. Therefore, educators in the field of e-learning should share how new technologies can be applied in and out of the classroom, and how contemporary pedagogical practices should be deployed. It's a great time for educational institutions to start working with technologies to make meaningful progress in this 21<sup>st</sup> century.

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**\* Corresponding Author:**  
**Dr J D Singh, Senior Faculty**  
*GV (PG) College of Education (CTE)*  
*Sangaria-335063, Rajasthan*  
*Email: drjdsingh@gmail.com, Cell: 9414577875*