Emerging Trends in Teaching and Learning with ICT and Barriers in ICT

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Abstract: This paper is about the concept of information communication technology its role, importance, usage in teaching and learning. The field of ICT joins science and technology .it contains the package of computer tangible and intangible items, cell phones and telecommunication, web, internet, guided and unguided media, digital cameras, artificial intelligence and the rest. It combines the field of computer and information science tremendous and speedily growing knowledge base that is developed by researchers and scholars. ICT has declared to be beneficial in solving problems in teaching, learning, education and related field. There are two types of learning mediums. Traditional medium and ICT medium.ICT replaced the traditional medium with smart technology devices. Emerging learning tools such as podcast, blog, integrated learning module Wikipedia and m-learning have begun developing rapid strides in teaching learning processes. There are some barriers of ICT in teaching/learning process were discussed using general talk survey, unstructured interview and observations. It exposed that teacher factor, chalk and talk, inadequate funding, infrastructure, internet connectivity were some of the barriers of Information communication technology in teaching and learning process.
Keywords:-ICT, Teaching, learning, Education, Communication

I. INTRODUCTION

ICT is the branch of knowledge, implementation, development of application, support and management of computer based information system. ICT is commonly an equivalent for computers and communication network but it also cover other information distribution technologies that is television and telephone. Which emphasises the role of interrelated communications of telecommunications, computers and necessary software, its storage and the audio visual systems which help most of the users to access, store, transmit and manipulate information. The phrase ICT is also used to define combining the audio visual and guided/unguided network with computer network through a single cabling or link system. Last few decades have observed enormous and phenomenal growth in field of ICT in Education also which have shaped the lives of students in some way. On the flip side, Smart technology is widely used in these days. Products related to smart technology such as smart television, smart phone, smart watch, tablets and gadgets et cetera.

These products have made human life more smarter, more easier, approachable and accessible. Smart technology has not only made the living attractive but also become mandatory part of everyone's life. Information technology is referred to the creation, processing, storage, gathering and transferring information . It also admits the processes and devices that make all this possible .Information technology processes raw data into useful information .It has been implemented by using electronic devices. ICT is protracted term for information technology which is a technical source to get information available at the right user, in the right form, at the right time and right place. Years ago a person had to wait for the newspaper to acquire the information national and international level. In modern life with the use of smart technology and gadgets information can be obtained from anywhere across the world. All this has become possible with the support of ICT. Information technology has been affecting our lives in the field of education for making teaching learning process interesting and successful for both teacher and taught. In 1998, The United Nations Educational, Scientific and Cultural Organization- Education report defines about teachers and students should have sufficient access to get better digital technology [3]. Availability of internet in their classrooms, teachers should have the appropriate knowledge and efficiently use digital electronic devices to assist all students achieve high academic study. Teachers are the heart and soul of any living society. They are the nation builders. Teaching is not everybody cup of tea and every Tom , Dick ,Harry can not teach well. Teaching is an art. Teaching is a profession and passion for some while it is a mission for some. Teaching occupies an imperative role in the life of young brains. A teacher always strive to develop the over all personality of the taughts. Overall personality include physically, psychological, socially, morally etc. On the other hand, learning is an unending process from womb to tomb. Technologies play tremendous role in training programme of intellectuals .Learners get knowledge and information through digital media ,Television cable network, Internet and social media that is Instagram, Twitter, Facebook, line, Whatsapp, Linkedinn, Wechat, Telegram etc. ICT plays a pivotal role for pre-service teacher education program in the Modern age. Without adequate knowledge of information communication technology teacher cannot give performance in his/her class room and it would not be said to be a proper one.

II. METHODOLOGY

The study is on the basis of secondary sources like Journals, Articles, Books, Expert opinion, University News, Thesis, websites and so on. Descriptive Analytic method is used in this paper.

I. NEED AND SIGNIFICANCE OF THE STUDY

The trends and scenario in the classrooms are changing .Technological gap can be seen between the advancement of the society and instructional acts of the teacher in his/her classrooms. Technology has revolutionized the lives of the people in society. On the other hand, the teaching and learning proceedings at educational institutes' level have remained so far off from ICT [1]. Interest was not being taken by the students and get bored in the class rooms .But Present century's education young brains learn from multi sources and for this purpose use of information communication technology is very much important in educational field .To achieve this teacher's skills and knowledge of multimedia and ICT also required. There is a great need and significance because this study reveals roles of information communication technology teacher's education [2].

II. USE ICT FOR LEARNING

There are two learning mediums that is Traditional medium and ICT medium. In traditional medium books, lectures, newspapers and notes were used. In ICT medium smart class rooms, Lap-tops, word processing, Internet, E-mail, multimedia digital libraries, E-books, E-lectures, search engines, electronic publications, games and simulations are being used by the learners. It replaced traditional educational medium with smart science or ICT medium. Moreover, ICT provides comfortable learning and promotes creativity. Pupil use services of computer based to find and search relevant information. They retrieve important information and decode it in various forms such as graphic, written, statistical and get latest information and knowledge of different fields using ICT services. Information technology can be used by learners to develop networks of co-learners and to construct, collaborate and share knowledge. Multimedia tools are being used by active learners and hypermedia promotes rich learning. Pupil work collaboratively not with each other but with scholars and teachers and share their information with the experts through video conferencing. Simulation helps to reproduce real-world situations. Simulations provide with mixture of text and graphics using conversation inquiry to guide the pupil [2]. Tutorial is one of the most important techniques of computer assisted instruction. Feedback provided by tutorial can produce with fantabulous tool for enhancing student knowledge. CAI is self-learning and interactive instructional technique where an electronic device such as computer is used as a tool to produce an instructional material. In online tutoring, the students log in his/her teacher through the help of internet at home tend questions are asked by the student then tutor gives response back to the student by writing on the smart board and PPT. Programmes usage drill and practice, simulation, problem solving approaches and tutorials to produce topics and are used to check the efficiency and understanding of the student. Drill and practice programme helps in increasing learner knowledge and skills through repetition. It provides automatic feedback to learners. Using website and search engine learner can search and collect information of required field and subject.

Tim Burner's World Wide Web is a great technique of flexibility in the dissemination of learning in interesting fashion. Web is a feasible tool to help students attain education without attending class. Students get E-books of their favourite author on any topic across the world through digital library.

A digital library is an ocean of textual data, numeric data, graphics, audio and video helps student to search any material regarding their study. Scholars use ICT tools to collect, process, analyze data. Information communication technology is very useful for teachers in research for organizing teaching material, participating in online conference and online forums as well.

III. EMERGING LEARNING TOOLS

We have listened to the names of following ELT which are widely used:-

A. **Podcast:-** Non-streamed web cast is known as podcast. It is a collection of digital audio or video media files. In order to listen, these files are downloaded by the user and are released episodically. A list of files related with given series updated centrally on the server and the listener can access these files through special software known as a pod catcher .User can check, update, and download new files in the series [6].

B. **Blog:-** Blog is a portion of website and generally updated by a person with regular entries of an events and other material. In most of the blogs, interactive comments are left by the visitors. Most blogs are mainly textual while some emphases on art photographs, audio, video and music.

C. **Integrated learning Modules:-** To increase the effectiveness of the teaching learning process is called integration. The content of the course is integrated and developing an incomparable perspective on course theme without the repetitive demands of standalone courses.

D. **Wikipedia:-** Wikipedia (http://www.wikipedia.org) is well-known online encyclopaedias where any person can enhance the site material as they see fit. The homepage of Wikipedia can be easily accessed using web browser with the help of an Internet. Each article can be interrelated to other article and develop a new network structure .

E. **M-learning:-** Guidance ,training, education is conducted by the use of portable electronic devices such as smart phones and tablet called Mobile learning. it provides the flexibility to the learners. With the advent of M-learning educational systems of learning are changed [7].

IV. ICT IN TEACHERS EDUCATION

Teacher Education demands to gear up intellectuals to face the changing technological circumstances and to model pedagogies for improved forms of learning. The environment of the class room is now changing its face from the old one. Now Instructors and taught take part in classroom discussion. Student centred education is to assist the student become responsible, liberal, independent and confident. [4] So the teacher must prepare to adopt the latest technology for using them in the class room for making teaching learning interesting. Technology becomes the effective tool for project based learning. Students are inspired to seek for information from different sources and now they are more aware and informed than before. So far this reason information, communication technology is very much essential for teaching education [5].

V. BARRIERS OF ICT

Government aim is to arrange tools and amenities to elevate the ICT in education. This aim is not met because of some factors include absence of computer science teachers to teach and guide students .There is also non availability of ICT tools and necessary components in the educational institutions. Even ICT has not been fully incorporated in the primary and secondary education nation-wide. Most teachers in the educational institutions avoid using ICT techniques. The negative effect of interrupted power supply in remote area's institute makes ICT inhibited. Access to telecommunication tools such as Internet and telephone still at low ebb. Digital divide is referred as favouritism against ICT usage between countries, region, cultural, religion, family, have and have-not people, urban and rural dwellers, race and gender and unprotected group. Teacher's presentation in the classroom is usually by chalk and talks medium. Instead of using ICT tools, Teachers are noticed bringing the chalk to the classrooms for delivering the lecture. Today, technology has changed from chalk to Power Point Presentations, e-learning and moving towards m-learning [8].

VI. RESULTS

This paper of the study reveals the different methods of teaching and learning as well and compares the traditional medium and ICT medium of learning. ICT plays crucial role for developing teaching as well as learning skills for both teachers and taught. The survey of this research proved that there are some barriers of ICT which must be improved.

VII. CONCLUSION

ICT therefore, in education is an essential tool in the modern teaching-learning process. The role of ICT in teaching learning process is an admirable and appreciated. It assists the teacher to update knowledge, skills to use the new digital resources and tools such as software applications and latest electronic devices. ICT is one of the major factors and plays a crucial role for producing the major changes in our society. ICT can change the nature of education and roles of students and teacher in teaching learning process. Now, Mentors in India started using latest techniques in the class room. Laptops, projector, LED, StudyPlaces (Educomp),

Smart class rooms last but not least is Memory stick, these tools are becoming the common media for teacher education institutions because teachers can make a bright future for pupil.

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8. Based on field survey

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My first name is **Jaswinder,** my middle name is Singh and sahota is my surname. I have passed my higher secondary and Senior Secondary from Punjab School Education Board, Mohali, in the year 1996 and 1998 respectively. I completed my three year bachelor degree from Panjab University Chandigarh , After it, I completed my M.SC.(IT) and M.C.A from Punjab Technical University. Under OPJS University, I completed my doctorate (Ph.D). At present, I work with an appellation as an Assistant Professor at Govt. College Hoshiarpur and having 10 years of teaching experience.
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