

## **ICT as a Backbone of Present Indian Education System**

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### **ABSTRACT**

*ICT is needed to assist teachers & fascinating learning thus all colleges have to be equipped with necessary. ICT is order to provide the next generation with the needed tools and resource for access and us to attain the expected skills. At present, every person in society should become technology competent. Now ICT have revolutionized our daily lives, work, Teaching learning business & Health. Computer technology would transform the existing educational system, raise the effectiveness and efficiency of the teaching and learning methods, and increase student achievement. ICT can motivate pupils, increase their self-confidence and self-esteem, stimulate their interest, increase their attainment, allow greater inter-activity and individualization, enhance the pupils' critical thinking, increase their creativity, etc. it can increase teacher's enthusiasm and efficiency, promote their co-operation and planning with ICT, reduce their workload, help them alter their traditional pedagogical belief, implement new pupil-centered teaching strategies, and enhance stronger relationship between teachers and pupils, amongst others. Once again, after the easy access to a wealth of knowledge about the benefits of ICT for teaching and learning purposes, the teacher and learning purposes, the teacher becomes the centre of the reform efforts. The use of information and communication technology as a tool for enhancing student's learning, teacher's instruction, and as catalyst for improving access to quality education in formal and non-formal settings has become a necessity. ICT have introduced a new area in Traditional Methods of Teaching & offering new teaching & Learning experience to both teacher & students.*

**Key words:** ICT, Backbone, Present Indian Education System

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### **INTRODUCTION**

21st century is the age of Information and Communication Technology. All over the globe, there is a trend to use ICT in the teaching learning process. The teacher and learner must gain access to technology for improving learning outcomes. Educational reforms include successful designing and implementation of ICT in teaching learning process, which is the key to success .It involves use of computers, computer software and other devices to convert, store, and process, transmit and retrieve information and includes the services and application associated with them.

Advancement in computer technology has caught the attention of many educators and researchers. Computer based instructional applications are considered an effective alternative to traditional teaching methods. Technology is described as the process by which people try to improve and organize the world. Despite, its increasing popularity in the society, most educational places have struggled to give appropriate, computer technology that is available to enhance human potential and teaching. Although the availability of computer use in classroom is increasing but the use of such resources continues to be low. There is growing evidence that teacher's attitude towards the use of computer technology

interferes with the willingness to use computer and to collaborate on integrating computer resources into classroom practices.

In olden times, teachers used to teach through teacher-centered methods. Those types of methods were very rigid, traditional, formal and stereo-typed in so many ways. That time, education was considered mere the process of transmitting knowledge and ideas. Students used to get by heart whatever was given by the teacher or written in the traditional textbooks. They often could not understand what was taught to them and were expected to reproduce at the time of examination [1].

Pupils were acted as silent audiences and could not make any logical queries or independent thinking of their own. But, today the condition is quite different. In the modern era of ICT, the students are not considered as an empty vessel to be filled in by facts and figures. They are now expected to use so many media and materials and to get learning experience from all directions. Education is regarded as a process of mutual interaction and interpersonal communication. The modern teacher has to help, to guide and facilitate the learner's all round development. The teacher has to inspire and motivate the young learners and assist the adult learners in their quest for knowledge and skills.

Don Knezek, the CEO of the International Society for Technology in Education, compares education without technology to the medical profession without technology. "If in 1970 you had knee surgery, you got a huge scar," he says. "Now, if you have knee surgery you have two little dots." [8].

Now a day, Information and Communication Technology (ICT) is helping teachers to expand beyond linear, traditional text-based teaching and learning; and to engage students who can learn best in other modern ways. Its role in schools has evolved from a contained "computer class" into a versatile learning tool that could change how we demonstrate concepts, assign projects and assess progress.

### **MEANING OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)**

According to Tech terms, ICT stands for "Information and Communication Technology." ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies.

In the past few decades, information and communication technologies have provided society with a vast array of new communication capabilities. For example, people can communicate in real-time with others in different countries using technologies such as instant messaging, voice over IP (VoIP) and video-conferencing. Social networking websites like Facebook allow users from all over the world to remain in contact and communicate on a regular basis. Modern information and communication technologies have created a "global village," in which people can communicate with others across the world as if they were living next door [10].

A good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organisations use information. 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, robots. Information and communication technology, or ICT, is defined as the combination of informatics technology with other, related technologies, specifically communication technology [5].

### **HISTORY OF USAGE OF ICT IN EDUCATION**

The term "information technology" evolved in the 1970s. Its basic concept, however, can be traced to the World War II alliance of the military and industry in the development of electronics, computers, and information theory. In present age of technology, education is based on the idea that learners can learn through oral and visual reception, exists in many forms, i.e. Streaming audio or video, PowerPoint presentations etc.

In the 1990s, there were a variety of schools equipped with Computer-based learning (CBL) system. Those were based upon constructivist and cognitive learning theories; it means the learning environment focused on teaching of both abstract and domain-specific problem solving learning [10].

In the 2000s, emergence of multi-media technologies, giving a new impulse to situated learning theories favouring learning scenarios. Students are growing up in a digital age now. The age, where they have constant exposure to multi-media. Computers are increasingly affordable; they continue to be proved more powerful as information-processing tools as well as easier to use. With today's sophisticated hardware, software, and communications technologies, it is often difficult to classify a system as belonging uniquely to one specific application program. Organizations increasingly are consolidating their information needs into a single, integrated information system [11].

### **SIGNIFICANCE OF ICT IN INDIAN EDUCATION SYSTEM**

The present generation is techno savvy generation. It is not their fault. They are numbed by too much of information and easy access to that information. How then, we can expect our students to sit and listen to lifeless sermons in their classes. The information that is given in the traditional classroom is redundant and presented in boring manner. NGC, Discovery, Fox History can take one to actual place and situations in few minutes. They show so much of the present and the past far and wide that one seems to learn unknowingly. One search on Google and the information at fingertips will be difficult to assimilate. How to make students use it in proper way by avoiding plagiarism is the challenge to a teacher. Vague expectations, lack of innovation, originality of ideas, and poor scope for creativity make teaching-learning process dull and boring. Mere use of computer or Internet doesn't improve the learning output.

ICT has become one of the basic building blocks of modern society, within a very short time. Many countries now regard understanding of ICT and mastering the basic skills and concepts of ICT as part of the core of education, along with reading, writing and numeracy. One of UNESCO's overriding aims is to ensure that all countries, both developed and developing, have access to the best educational facilities necessary to prepare young people to play full roles in modern society and to contribute to a knowledge nation. Maintaining a capacity to advise national governments on the use of technology in schools and, in particular, on the optimal balance, given local circumstances, between ICT and older educational technologies and assisting countries in developing educational software and materials that reflect their own national and regional cultures are key components of the Organization's strategy to achieve the 'Education for All' goal. Moreover, different technologies are typically used in combination rather than as the sole delivery mechanism [9].

Although ICT offers the opportunity to construct powerful learning experiences, yet it is pedagogically neutral. That is, ICT may be used along with traditional teaching methodologies like the large group lecture, student note-taking and examinations. Teachers can use the computer and projector to show slides to illustrate a lecture while, students can use laptops to take notes during the lecture and quiz of multiple choice questions about the content of the lecture can be put on a website. How these new ICT tools and resources will be used, is a human decision, not inherent in the manual of technology themselves.

ICT has the potential to be used as a supportive educational tool enabling students' learning by doing. It can make it possible for teachers to engage students in self-paced, self-directed problem-based or constructivist learning experiences; and also test students learning in new, interactive, and engaging ways that may better assess their understanding of the content.

A second way to assess the significance of use of ICT in education is to consider what its use enables students and teachers to do that they would not otherwise be able to do.

To explore this question, we consider five aspects of the educational use of ICT –

- supporting new pedagogical methods
- accessing remote resources
- enabling collaboration
- extending educational programs and
- developing skills for the workplace

Modern constructivist educational theory emphasizes critical thinking, problem solving, “authentic” learning experiences, social negotiation of knowledge, and collaboration – pedagogical methods that change the role of the teacher from disseminator of information to

learning facilitator, helping students as they actively engage with information and materials to construct their own understandings. That is, students learn *how* to learn, not just *what* to learn.

A lead researcher from Liz Burdon Britain's Durham University, said, "Our aim was to encourage far higher levels of active student engagement, where knowledge is obtained by sharing, problem-solving and creating, rather than by passive listening. This classroom enables both active engagement and equal access".

### ICT AS A TOOL OF TEACHING IN INDIAN EDUCATION SYSTEM [5-7]

There are various ways of using ICT as a tool in classrooms. Among these are:

- **Personal Computer in the Classroom:** Having a computer in the classroom is an asset to any teacher. With a computer in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new information on websites.
- **Mobile devices:** Mobile devices such as tablet or smart phone can be used to enhance the experience in the classroom by providing the possibility for professors to get feedback.
- **Class Blogs and Wikipedia:** There are a variety of Web 2.0 tools that can be implemented in the classroom. Blogs allow for students to maintain a running dialogue, such as a journal, thoughts, ideas, and assignments that also provide opportunity for students to comment and reflection. Wikipedia, an online encyclopedia, is more group focused to allow multiple members of the group to edit a single document and create a truly collaborative and carefully edited finished product through team work.
- **Wireless Classroom Microphones:** Noisy classrooms are a common practice, and with the help of microphones, students are able to hear their teachers more clearly. Students learn better when they hear the teacher with clarity.
- **Interactive Whiteboards:** An interactive whiteboard that provides touch control of computer applications. These enhance the experience in the classroom by showing anything that can be on a computer screen. This not only aids in visual learning, but it is interactive so the students can draw, write, or manipulate images on the interactive whiteboard. Generally, Smart classes are equipped with it.
- **Digital video-on-demand:** Digital video eliminates the need for in-classroom hardware and allows teachers and students to access video clips immediately by not utilizing the public Internet.
- **Online media:** Streamed video websites can be utilized to enhance a classroom lesson.
- **Online study tools:** Tools that motivate study, by making study more fun, interesting, easy or individualized for the students.
- **Digital Games:** The field of educational games and other type of games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students.

There are many other tools being utilized depending on the funds available at the schools.

### CHALLENGES IN USAGE OF ICT IN INDIAN EDUCATION

Although technology in education is implemented at very early stage, still our country India faces so many challenges ahead for the implementation of ICT in education [4]. Some of them are discussed here:

- **Limited Access:** There is not sufficient or limited access to computer hardware & computer software in Indian educational institutes as well as at home too.
- **Lack of Time:** There is shortage of time in academic schedule for projects involving use of ICT.
- **Insufficient Technical Training and Support:** There is a shortage of adequate technical support and teachers training for usage of ICT in our educational institutes.

- **Lack of Knowledge:** There is a lack of knowledge about the ways to integrate ICT in education for enhancement of curriculum.
- **Still Not A Priority:** Integration of ICT in education is not, still a priority in India.

There is also a negative aspect of usage of ICT in education. Many ethical questions and issues arise with this use of the ICT in education.

- **The Copy-Paste Syndrome:** Educational Institutes have more and more problems with students who prepare essays, project, assignments, articles, research papers or presentation by using material from websites or blogs. Often, students just copy pieces of information that look relevant and paste them together, without sometimes even understanding them without citing them.
- **Distortion of reality:** When students are looking for some information on the website, they usually use a search engine. This will give them a ranked list of often incredibly many search results. There is the real danger that their view of reality is distorted by the website.
- **Too much trust in the information found:** When searching for some information on the website students tend to accept what they have found as true information, often without looking at other sources and hence having no justification to accept the information at face value.
- **Loss of privacy and profiling:** When students use services offered by the various websites it is clear to us that they are making often information about us known to the service providers. The situation gets much more complicated if a company has a set of services so that combining all the information that potentially can be extracted gives a very detailed profile. There can be no doubt that some companies are collecting information or profiles on users and on economic relevant developments. This may be done through stealth as described or from open social networks where many persons give away information that may well be harmful to them at some later stage.

### ROLE OF TEACHER TO USE THE ICT

Teacher need to prepare computer based teaching materials, provide opportunities to assess information and develop interdisciplinary thinking. Teacher educator should be geared to utilize these tools and products to ICT to develop skills of technology mediated instruction among teachers. The ever increasing use of ICT in every walk of life makes this prevailing situation call for ICT to use teachers to awake them to use ICT too [3].

The need of hour is to change the roll of teaching and teachers towards ICT. The study makes further contribution through its findings by revealing the differences between various categories. So far as attitude towards ICT is concerned. The educational planner and administrators can take clue from following revelations of study:

1. More and more facilities and opportunities related to ICT should be provided to teacher educators from rural background. So they might feel motivated to use ICT in classroom teaching.
2. Equipment should generally be installed in colleges in rural areas.
3. Special programs related to use ICT in teaching learning process should be conducted for teacher educators'.
4. Almost attention should be paid to utilization of the latest relevant techniques and technologies in the field of education. [2]
5. Teacher should be encouraged and motivate to use ICT during their studies.
6. Teachers should also use the computer during teaching. So that the students may also be aware about the use of in education.
7. Teacher should have ability of assess software so they could use computer effectively in the classroom.
8. Specialized courses on a range of topics, such as ICT across the curriculum and classroom management should be organized by the universities.
9. Teacher educators' should have positive attitude towards ICT.
10. Some innovative methods related to ICT should be included in the syllabus of teacher education programme.

11. NCTE should make it mandatory that teacher should submit a project regarding online learning
12. The teacher educators should be used ICT during their practice teaching.
13. Special effort should be made to trained a larger number of teacher educator in teaching through ICT.
14. Teacher need to reform their conceptions of teaching to be able to see how ICT would be used as a tool for the construction of knowledge and for classroom management.

### CONCLUSION

Technology can share the responsibility of a teacher by making teaching-learning task easy and interesting. Teachers use technology as an extension of how they already teach which, in turn, is a function of what they know and believe about teaching-learning. If change is desired, teachers need professional development that will help them feel knowledgeable about ICT and which focuses beyond the functionality of the tool to incorporate the ICT as a means of meeting learning goals. In addition, professional development should provide opportunities for teachers to reflect upon and discuss their beliefs about teaching-learning in relationship to their knowledge and beliefs about the use of ICT in the classroom. Teachers should be involved in helping students learn how to use the ICT with full recognition of its constraints and potential. They should also understand various profiles of student behavior in order to design and implement appropriate academic activities using ICT. Students would benefit from confronting limitations of the ICT and considering how to make more effective use of ICT in education.

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