



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2016; 2(2): 87-89  
www.allresearchjournal.com  
Received: 08-12-2015  
Accepted: 09-01-2016

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## **Information and communication technologies (ICTs): Innovative tool of education**

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### **Abstract**

Information and Communication Technologies (ICTs) have brought in a convergence of the media along with the possibility of multi-centric participation in the content- generation and dissemination process. This has implications not only for the quality of the interchange but also for drastic upheavals of Centre-dominated mindsets that have inhibited qualitative improvement. Modern ET has its potential in schools, in the teaching of subjects, in examinations, in research, in systemic reforms, and, above all, in teacher education, overcoming the conventional problems of scale and reach through online, anytime, anywhere. There exists today a well-established publishing industry, including desktop publishing, with know-how and capabilities in producing kits, teaching aids, etc. There also exist production capabilities for audio and video, multimedia, broadcast channels, Internet connectivity, trained manpower, and institutions with these mandates that can be leveraged to address the challenges of education.

A very important factor impelling change has been the technological explosion, particularly in the area of ICT (Information and Communication Technologies). Such technologies are double-edged swords. They allow People to contact one another and exchange ideas very easily in order to create communities built around common interests and common causes. They also make it possible for global corporations to move billions of dollars around the world with the click of a button.

**Keywords:** Information and Communication Technologies (ICT), Educational Technology (ET), Innovations in Teaching and Learning.

### **Introduction**

Educational Technology (ET) is the efficient organization of any learning system adapting or adopting methods, processes, and products to serve identified educational goals. This involves systematic identification of the goals of education, recognition of the diversity of learners' needs, the contexts in which learning will take place, and the range of provisions needed for each of these.

The challenge is to design appropriate systems that will provide for and enable appropriate teaching-learning systems that could realize the identified goals. The key to meeting this challenge is an appreciation of the role of ET as an agent of change in the classroom, which includes not only the teacher and the teaching-learning process but also systemic issues like reach, equity, and quality.

It is the hour of realizing the magic that the teacher is disappeared today but he goes on enlightening the students through his virtual presence i.e. an environment of virtual classroom created by the use of modern ICT.

Information and communication technology (ICT) as we find today has a meaningful present and promising future in our country. It has been contributing a lot of the improvement of products and processes of education at all levels and stages of planning, implementation and evaluation. With the advent of satellite services especially with the launching of the EDUSAT project, there has been series of innovative and constrictive television programmes for national development and for educating the Indian masses living in remote, rural or underdeveloped areas. Educational technology is proving its worth by utilizing the services of computers and advanced form of ICT technology in the field of education. Use of these advanced technologies has a tremendous scope in improving the products and processes of education. In the developed forms of computers and ICT technology, it can help the teachers, learners, researchers, administrators and educational planners to get access to a valuable treasure of knowledge, skill and application for improving their own task. Distance learning,

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virtual classrooms, e-learning and m-learning are the latest concepts and trends that are emerging in the educational horizon of our country.

Today ICT has enough potentiality in preparing the teachers for meeting the challenges of the teaching learning task besides helping them in the proper execution of their multidimensional responsibilities of their work areas. It can now be properly infused into the entire teacher education programme (both pre service and in service) not only to help them using it for their own education and training but the learning to use it creatively and constructively for fastening the educational growth of their students and playing the role of effective teachers as demanded by the ICT ruled modern society. Most of what the students acquire in terms of the knowledge understanding, skill, interest, attitudes and appreciation is received through the process of information and communication controlled by ICT. It also helps them get self-paced auto instruction related to the curricular and non-curricular areas of education. Thus the application of ICT has a promising future in the field of education and training and gradually the future of India is being shaped by the use of ICT technology in its classroom.

### **ICT a Solution of the Expertise for Teachers**

ICT enabled distance education is poised to rule the world. This would not only strengthen the elementary education needs of the country but would also increase the dependence of education on ICT. Technological development always warrants transition to newer technologies by jeopardizing the cost effectiveness of the distance education programme. Retaining the already existing technologies for a considerable period of time and subsequently embracing new technologies should have fine balancing, so as to improve also the quality of education.

India is one among the few countries in the world, which has not allowed the expenditure on education to shrink over the years. The increase in expenditure on elementary education alone over the last four Five Year Plan periods has been more than the increase in expenditure on education as a whole. With all the inputs around, there is only hope for enhancing the quality of education at the elementary stage.

Education, as we know is instrumental in ensuring that the future generation is well informed and competent. Unfortunately, because the quality and accessibility of education varies so greatly between regions, the school system of our country often fails to deliver the level of education necessary to ensure such competency. Many schools have limited resources for buying books, stationery, furniture and other classroom materials. Teachers' lack adequate qualification and training to engage their students in learning. Their lesson plans are most often outdated or irrelevant. These jeopardize the available quality of education. ICT enabled distance education, to a great extent, can combat this problem. Because the present day distance learning is ICT-enabled, most of the programmes include computer and Internet training to facilitate the use of essential technology. The acquisition of fundamental ICT skills among teachers and students helps knowledge sharing, thereby multiplying educational opportunities. However, all teachers are not willing to introduce new technologies to themselves first and subsequently to their students. In order to implement ICT-driven distance education programmes, the teachers must first understand and be comfortable with the technologies. They must be given opportunities for

acquisition of a new knowledge. This can begin by promoting computer-training programmes for teachers. Monetary incentives can be offered as means of motivation.

### **ICT as Emerging Trend in Present Education System**

CAE has already evoked positive responses from the learners, teachers and parents. The increasing demand for its up-scaling has immense concerns for the teachers. While they will be getting more and more involved in encouraging students to use computers more and more for self-learning, they will also have to use it for up-gradation of their personal knowledge. Personal knowledge, in this context, shall have wider ramifications which shall include up-gradation of content knowledge, awareness of computer programmes and operations, developing scripts for hard spots contextual to meet the learners' needs, probing into novel learning activities using internets. The immense potentiality of CAE can, thus draw the teachers to update their knowledge and skills.

### **Conclusion and Recommendation**

- ❖ The rate at which we have to respond to changes affecting education is much faster than ever before;
- ❖ It is urgent to realign the curriculum framework to provide outcome-based, flexible learning paths leading to mastery learning;
- ❖ Training and orientation of teachers, administrators and students to the new learning technologies is an immediate requirement;
- ❖ Teachers already in the profession should have the right to adequate time and resources for continual professional development to acquire and maintain ICT skills
- ❖ Teachers should have adequate time to plan the introduction of ICT into their pedagogical practices to ensure high quality and appropriate learning.
- ❖ To ensure that teachers, educational authorities and other stakeholders enjoy the maximum benefits from the use of these technologies, all should be involved in information sharing, consultation and negotiations, according to the issue involved.
- ❖ Building appropriate information systems, including channels for sharing and communication. Also identifying means for accessing/developing knowledge and ensuring their use in taking critical decisions.
- ❖ Redefining some of the processes and procedures, with an in-built emphasis on answerability towards people. The focus should also be on transparency and the use of information/ objective criteria.
- ❖ Teachers should have adequate time to plan the introduction of ICT into their pedagogical practices to ensure high quality and appropriate learning.
- ❖ To ensure that teachers, educational authorities and other stakeholders enjoy the maximum benefits from the use of these technologies, all should be involved in information sharing, consultation and negotiations, according to the issue involved.
- ❖ Teachers already in the profession should have the right to adequate time and resources for continual professional development to acquire and maintain ICT skills
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