

Information and Communication Technology (ICT) and Society

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ABSTRACT

We are living in the era of technological revolution. The Information and Communication Technology (ICT) has certainly improved our lives. It can be best harnessed to improve the efficiency and effectiveness of education at all levels in both formal and non-formal settings. It has made our material life easier and happier. But it has brought new forms of national and international issues of ethics and human values in the mask of Globalization. It has a potential threat to the valuable aspects of our ancient culture and traditions. At the same time we should not forget its immense damage to our society when it is caught in the hands of extremists and terrorists. It has potentially powerful tools for effecting reforms and lifestyle. It paves way for a new system of teaching and learning process. The teacher has to play a pivotal role for the successful implementation of ICT in classroom.

Keywords

ICT, Communication, Technology, BPO, SSA, RMSA, MAS, Green IT.

1. INTRODUCTION

Information and Communication Technologies (ICTs) play an important role in the field of education. ICT deals with the application of different electronic media in collection, storage, and rapid access of information to users. Its benefits reach everyone in the nook and corner of the world especially rural poor and disadvantaged women. The basic elements of ICT are communication, storage and retrieval of knowledge. Libraries, besides the repositories of books and journals, now become access points for data bases, websites and a range IT-based products. ICT stimulates the learners to acquire quality research through team work and time management. Education technology visualizes three strategies for the teaching and learning process. They are mass communication, individualized learning and group learning. No single technology is suitable for all types of situations in teaching. The technology which is less expensive, low time-consuming and highly effective in delivering the contents of students must be considered. Integrating the whole technology with the latest technology is considered to be the best way of educating the learners. Future education will be technology-led, skill matched and need-based education. New technologies namely satellite communication, Fiber Optic cable and computers have enhanced educational capabilities.

2. COMMUNICATION

It is the process of transfer of information from the sender to receiver. Today communication skills are equally important as knowledge and technological skills. There are four components in the process of communication. There are

1. Sender / Source / Encoder
2. Message / Signal
3. Medium / Channel of communication
4. Receiver / Destination / Decoder

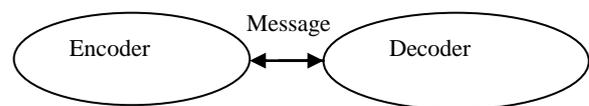


Fig 1: Process of transfer of information

3. Definition of ICT

Information and Communication Technology (ICT) is defined as technology that utilizes a combination of Information Technology (such as computer or data bases) and Communication Technology (such as wire and wireless networks). ICT means Information and Communication Technology. It is a diverse set of tools and resources used to communicate, create, disseminate, store and manage information. It refers to the integration of computing technology and communication. It is basically information handling tools. Distance education will be more effective if we integrate old technologies with the new ones.

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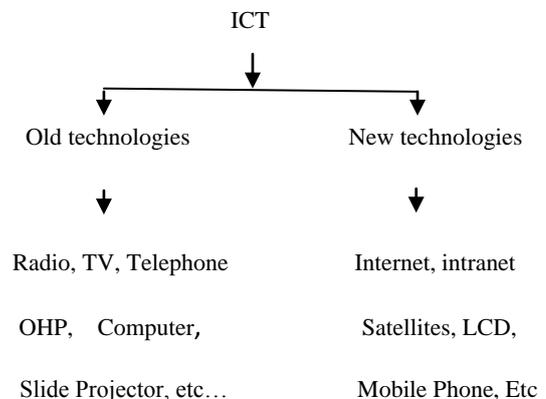


Fig 2. Types of ICT

The basic elements of ICT are communication, storage and retrieval of knowledge. Libraries, besides the repositories of books and journals, now become access points for data bases, websites and a range of IT based products. ICT stimulates the learners to acquire quality research through team work and time management. Education technology visualizes three strategies for the teaching and learning process. They are mass communication, individualized learning and group learning.

The technology which is less expensive, low time-consuming and highly effective in delivering the contents of students' information and knowledge must be considered. Integrating the whole technology with the latest technology is considered to be the best way of educating the learners. Bates has outlined the developments in ICT with implications for learning. They are:

- ❖ Integration of TV, Telecommunication and computers through digitization and compression techniques.
- ❖ Reduced costs and flexible user applications of Telecommunications, through developments such as ISDN / Fiber optics / Cellular radios

4. Features of ICT

The features of ICT are: Technology Medicated Learning (TML) such as e- Learning, Online Learning, Web-based Learning, Virtual Learning, and Distributed Learning. Online Learning and Web-based Learning refers to learning through internet. E-learning refers to the learning through electronic gadgets like TV Radio, CD-ROM, DVD, Multimedia packages and Mobile Learning.

5. IGNOU and ICT

The Indira Gandhi National Open University started distance education in 1987. Its educational programmes were initially telecast through the Doordharshan's Channel. In January 2001, a separate TV channel called Gyandharshan was launched. In November 2001, Radio Broadcast services were started using a new FM Wave Channel. Today the Directorate of continuing education, Correspondence education, Distance education, Open school, Open University and Floating University has come to stay to reach out the goals of life-long education.

Indian Society of Technical Education (ISTE) has started organizing e-Outreach Programme and the nationwide Teleconference funded by National Mission on Education through ICT, MHRD, Government of India. It is actually a Virtual Interactive e-Learning Programme

6. TEACHERS' ATTITUDE TOWARDS ICT

It has been found that most of the teachers are not prepared to use ICT and the majority of school buildings are not equipped to integrate the ICT (UNESCO, 1988: World Education Report). Such is the attitude of most of the teachers in formal education. Carlson indicates that success is ensured when teachers acquire soft skills and knowledge by using technology effectively

7. ICT AND CLOUD COMPUTING

Whenever we send e-mail or upload photos or post something on our blog, we are knowingly or unknowingly navigating through something called "Computing Cloud" The "cloud" symbol of the Internet might have inspired this concept of cloud computing. It is about relocating computing tasks from

a physical termination to the virtual cloud. A cloud computing terminal shifts the CPU's entire workload of our personal computer to a virtual server. All data and application are stored in the cloud. The advantage of cloud computing is one's data can be accessed from anywhere through the internet. In theory, a cloud computing system could run practically any computer programme. We can imagine from a simple text editor to videogames. It can be used to provide solutions with minimal infrastructure at low cost. It can address the needs for the future collaborative and coordinated healthcare for improving the quality of life.

8. EDUCATION AND MEDIA

ICT techniques in education such as Computer Aided Learning (CAL), Computer Mediated Communication (CMC) both synchronous and asynchronous programmes and Computer Aided Assessment can best be harnessed to improve the efficiency and effectiveness of our educational system. The Computer Literacy and Awareness in Secondary Schools (CLASS) Project in 1980s could be marked as the genesis movement in India. ICT tools are potentially powerful tools to effect reforms in education and society as well. Distance education and formal education can be enriched and made more attractive, effective and satisfying by using a variety of media relevant to the content of learning. Media are of two types. They are:

1. Print Media
2. Non- Print Media

8.1 Print Media

Distance education cannot do without the printed course materials. Books, magazines, journals, newspapers, and periodicals come under print media.

8.2. Non Print Media

Radio, TV-set, Audio and Video Cassettes, Telephone, Computer, Internet, Satellites, Videotext, Teletex, etc..., come under non-print media.

8.2.1. Videotex

Here, home TV sets function like computer terminals and retrieve text, information and graphics from a remote database. It is two-way service using lines. It gives much wider access to information

8.2.2. Teletex

It is a one way services in which pages of information from a central database are broadcast on a regular TV signal

8.2.3. Internet

E-Mail, Teleconferencing (Audio & Video), Computer conferencing are common activities on the internet which is a network of computers.

8.2.4. Satellite

This is the glamorous media in distance education. IT is used for communicating over long distance. More channels for both Radio & TV are possible because of the satellite.

8.2.5. Virtual Class Room

This can be created in which the class is taught using the satellite, microwave or cable linkages between them. The electronically linking of students and teachers at various locations by cable microwave or satellite has made it possible to create this face-to-face teaching at a distance. However, there is a limitation in developing countries. Universities and colleges are yet to tap huge potential of cloud computing for virtual learning.

9. ICT and BPO Call Centre

The Business Process Outsourcing (BPO) industry grows rapidly making our country into electronic house keeper of the world.. Call Centre is defined as a physical or virtual operation within an organization in which computer trained people spend most of their time doing business by telephone, usually working in a computer-automated environment (Marr & Neely, 2004). Bangalore has become the hub of the country's IT sector with the full attention of the world media. It is the birth place of IT giants like Infosys, Wipro, etc.

10. ICT AND UTILITY SERVICES

With the advent of technological revolution, life-line activities are made easy. Online booking is made for any thing and every thing like tour and travels, boarding and lodging, LPG supply, hospital service, etc. Even lay man operates cell phone.. Technology is simplified .It is within the reach of the common folk.

In order to provide automated information to the students and the public, some educational institutions use the technology of Digital Voice Information System (DVIS) which is a fully automated computerized telephone answering machine. DVIS responds when anyone calls the telephone number in different languages. It provides required automated information.

Short Message Services (SMS) are also introduced for the students to avail computerized information. Mass Alert Services (MAS) is for the students to receive automated information from their institutions in message formats on their cell phones by registering their cell phone number.

11. GREEN IT

Technology which concerns with efficient power consumption, recycling of older equipment use of non-toxic materials, emission of low radiation, etc is called Green IT. Its basic aspect is the reduction of waste so that computing resources are used efficiently and optimally. It concerns with the erection of Cell-phone towers in residential area emitting radio waves causing cancer and immense damage to human beings and birds. It deals with the safe disposal of waste materials of ICT accumulating over years. Green IT lays emphasis on healthy environment with technological background.

12. ADVANTAGES OF ICT

- ICT enhances teaching abilities of teachers
- It improves the learning efficiency of students
- It can be harnessed as an effective method of teaching
- It encourages collaborative learning
- It enables self-paced learning
- ICT instructional technologies have brought changes in pedagogy and curriculum content
- Internet facilitates online teaching and learning. It removes time, space and socio-economic barriers to learning.
- E-Governance, e-banking, e-Commerce, e-Shopping etc., are done easily.
- It promotes recreational activities for the vast masses
- Life is made easy for the society.
- Internet becomes an haven for the job-seekers and knowledge-seekers
- Service to society is made simple

13. DISADVANTAGES OF ICT

ICT approach in education may develop some problems in respect of cost, training, distractions, reliability, damages, safety, hacking and lack of resources and fund. Networking systems India can make mark in the education only when it develops a large number of efficient, committed and trained media persons to implement new technologies in the field. There are severe limitations in the use of ICT in the developing countries. It may take two or three decades to overcome these limitations

14. CONCLUSION

ICT plays an important role in education sector. It has come to define how people live and work. Globalization has moved the education sector to industry sector. Our information society is transforming into knowledge society. ICT deals with the application of different electronic media in collection, storage, and rapid access of information to users. Its benefits reach everyone in the nook and corner of the world especially rural poor and disadvantaged women. The TV programs of UGC are very popular these days.

Roses are beautiful but thorns are there hiding under the petals. Even the moon has darker side. When we boast of the beneficial side of ICT, we should not forget its harmful side. It is not the knife that matters but the way it is used. Some people misuse the benefits of ICTs and violate the ethics and human values. These violations have created new problems inhuman social systems, such as the digital divide, cyber crime, digital security privacy concerns, all of which have affected people's lives either directly or indirectly. It can be used to subdue, enslave, and dehumanize people psychologically, intellectually and emotionally.

Amidst all academic dust and fury that shroud over our education system, reforms and revolution are rapidly taking place. The Sarva Siksha Abhiyan (SSA), Rashtriya Madhyamic Siksha Abhiyan (RMSA) enrichment programme I tertiary level herald rapid reformation in education field. The IT and BPO are blooming again and with the job market following a brief lull during global recession. It is the human resource that makes or breaks an organization, especially in IT sector. ICT is an instrumental of all human beings in gathering information and knowledge. As such it should be guaranteed as our basic right. Students, fresh graduates and employees are keen on upgrading their computer skills. It is the domestic software sector and not the overseas market that is going to herald the growth of our nation and the affluent society. Teachers should change their attitude by equipping themselves with technological skills and articulation skills

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