INFORMATION AND COMMUNICATION TECHNOLOGY

It is well accepted that Information and Communication Technology (ICT) has an immense potential to influence the education of children, teachers, teacher educators and others , and provide newer and more effective ways of mitigating some of the challenges being faced by the educational system of our country. This technology distinguishes itself by its rapid evolution, continuously changing the modes of engagement along with it.

INTRODUCTION OF ICT

ICT has become a buzzword while talking about technology and its applications.

ICT is used in various business and management functions, but not in the improving the quality of education. Quality of education has been an issue of concern in the absence of standard parameters to measure the quality. Hardware, software, the methods and knowhow required or used in acquiring, storing processing and displaying data and information is collectively known as Information Technology (IT). Also, on the other hand, many developments and achievements took place in communication technology sector after the Second World War Hardware, knowhow, programs and the methods used in ensuring that message is transmitted correctly, efficiently and cost effectively are collectively known as Communication Technology (CT) Both of these technologies became complementary to each other, which means, progress in one technology alone is not much beneficial. Hence, IT and CT started moving together and a new term was coined named as Information and Communication Technology (ICT), Convergence of these technologies gave birth to ICT

Meaning and Definition of ICT

 ICT Stands for "Information and Communication Technology/Technologies." ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums. 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. For this reason, ICT is often studied in the context of how modem communication technologies affect society

ICT is technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data. Increasingly, these activities also involve collaboration and communication. Hence, IT has become ICT. Technology does not exist in isolation.

• ICT contributes at various points along a line of activity.

• ICT is used in activities - the ICT use depends on the activities.

• The key outputs of educational activities are contextual knowledge, experience and products

• The output should be useful to the users (self and others).

NATURE AND NEED OF ICT

Education system includes formal and Non-formal forms of education at various levels of education. Teaching is imparting knowledge or skill, whereas learning is skill acquisition and increased fluency Usage of ICT is one of the way by which India's large population base can be effectively reached. Moreover, in enhancing the quality and delivery of services through ICT, especially in the case of developing relations betweencitizens and the Government. Passive learning occurs when students use their senses to take in information from a lecture, reading assignment, or audiovisual Traditional lecture is not an effective learning environment for many of our students because so many students do not participate actively during a traditional lecture. This is the mode of learning most commonly present in classrooms, whereas active learning involves the student through participation and investment of energy in all three phases of the learning process (input, operations, and feedback). This type of learning is more apt to stimulate higher cognitive processes and critical thinking. In the past few years, there has been a paradigm shift in curriculum, where teacher acts as a facilitator in a student centered learning. In Student centered learning, focus is on the student's needs, abilities, interests, and learning styles, with the teacher as a facilitator of learning. Here, students have to be active responsible participants in learning process. Teacher has key role in the whole process, whereas in case of ICT based education, various ICT tools are supplemented to make the teaching-learning process effective. With the help of blended learning, total time devoted to teaching can be decreased A survey says that there was a sense of pride created and interest generated among the teachers and students for gaining ICT and its privileges ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. ICT as a tool can overcome the issues of cost, less number of teachers, and poor quality of education, as well as to overcome time and distance barriers.

Features of ICT

1.**Anytime, anywhere** : One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (ie, synchronous learning).

2. **Access to remote learning resources** : Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the

day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources, ICTs also facilitate access to resource persons, mentors, experts, researchers, professionals, business leaders, and peers all over the world.

One of the most commonly cited reasons for using ICTs in the classroom has been to better prepare the current generation of students for a workplace where ICTS, particularly computer, the Internet and related technologies, are becoming more and more ubiquitous. Technological literacy, or the ability to use ICTs effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalizing job market. Technological literacy, however, is not only the skill that well-paying jobs in the new global economy will require. En Gauge of the North Central Regional Educational Laboratory (U.S.) has identified what it calls 21st Century Skills, which includes digital se literacy (consisting of functional literacy, visual literacy, scientific literacy, technological literacy, information literacy, cultural literacy, and global awareness), inventive thinking. higher order thinking and sound reasoning, effective communication, and high productivity.

Aims of ICT

The followings are the aims and objectives of ICT implementation in education:

1. To implement the principle of life-long learning / education

2 To increase a variety of educational services and medium / method

3. To promote equal opportunities to obtain education and information.

4 To develop a system of collecting and disseminating educational information

5. To promote technology literacy of all citizens, especially for students.

6 To develop distance education with national contents.

7. To promote the culture of learning at school (development of learning skills.

expansionexpansion of optional education, open source of education, etc)

Objectives of ICT

Successful ICT initiatives mect three intertwined objectives

• Availability:

• Access, and

• Demand

Educational ICT tools are not for making educators master ICT skills themselves, but for making educators create a more effective learning environment via ICT. Teachers can utilize ICT tools to get benefits from using these tools in the areas of content, curriculum, instruction, and assessment ICTs include fixed-line telephony, mobile telephony, newspapers, radio, television, radio trunking. very small aperture terminal (VSAT), computer, and internet must be accessible to rural public as per their demand

The Objectives of ICT can also be categorized into following categories

1 National Economic Contribution

2 Stakeholder Orientation

3. Operational Efficiency

4. Future Orientation

Based on the aforesaid four categories, it is possible to develop an ICT Balanced Scorecard. All schools in India have to be a part of hub and spoke model defined within the clusters of villages/locations within a year, a technology package and a computer lab and an electronic library system. However, the challenges would include aspects such as Basic Software Content Language diversity in India, which will force ICT to have content in multiple languages. Lack of trained teachers and motivation of all cancemed authorities, particularly school administration's mindset to and non-appreciation of value of ICT to transform and improve education will have to be addressed. The language diversity in India does not negate the lack of regional teachers, as the teaching may have to be in regional languages. The advantages that developed countries (or single-language countries) have, is absent in India, owing to its language diversity. Other issues such as accessibility, affordability and networking and the annual budget would also be included.

Scope and Functions of ICT

India has an excellent opportunity to initiate its efforts in re-formulating an education policy in such a way that the following can be the key areas of focus

1. Creativity, cultural values, national need, critical thinking. Entrepreneurial Thinking and subject orientation formulate the content for students across school education.
2. Education system is in continuous alignment to the economy GDP 2020 vision of 44% of national   GDP from agricultural income, 21% of GDP from manufacturing sector and 35% of GDP from the services sector.
3. Develop knowledge resource, not just to meet the national need, but also the global need on knowledge human resources.
   It is important that the existing economic and digital divide needs to be bridged.
   Implementation and integration of ICT into the education system should address the following points:

1. Regardless of gender and financial status of students, education for every student should be the motto of ICT implementation

2 Provide cost-efficient delivery of education to build a strong equitable and economically strong knowledge society.

3. Develop partnerships with government and private agencies for delivery of ICT education

4. Create inter-connected clusters of villages with a central hub. Each central hub connected to an urban city with basic health-care facility provided.

5. Pilot test the hub-cluster model with three villages near an urban city

ICT implementation has given an excellent opportunity for the Education Policy Implementation specialists to re-visit what we want our future leaders of India to be like. In this way, we get an idea of what needs to be taught, who is your target audience across India, and how to reach all corners of India.

The country's growth is measured by its economic state, literacy rate and health- care facilities. By 2020, the employment pattern should aim at 449 in agriculture, 21% in manufacturing and 35% in service sectors. Of course, manpower reduction in agriculture has to be met with increased technological input.

Universities and educational systems should create two cadres of personnel

1. A global cadre of skilled youth with specific knowledge of specific skills, and 2 Another global cadre of youth with higher education.

Working backwards from the national 2020 vision we can derive a vision for ICT in schools. The driving factors of the vision are

1. Ensure that when students leave school, they should be confident, creative and productive users of new technologies, and more importantly, understand the impact of those technologies on society

2 Prepare students for adult life when nearing the end of their compulsory schooling.

3. Enable equitable and cost-efficient delivery of education to create a strong equitable, imaginative and economically strong knowledge society, which is globally integrated

4. Implement technology education - not as an end in itself - but as a means to promoting creativity, empowerment and equality producing efficient learners, problem solvers, potential researchers and potential entrepreneurs.

S. Support education and training workers to acquire and maintain the skills needed to take full advantage of the potential of ICT to transform learning

6 Partner across agencies at all levels of various ministries in the government to ensure the development of a policy and regulatory framework to enable acceptance of ICT in education and training.

Importance of ICT

Today, developing countries are facing many challenges: one of them is that of preparing their societies and governments for globalization and the information and communication revolution Policy-makers, educationists, non-governmental organizations, academics, and ordinary citizens are increasingly concerned with the need to make their societies competitive in the emergent information economy Globalization and innovations in technology have led to an increased use of ICTS in all sectors and education is no caption Use ICT in education are widespread and are ntinual growing worldwide. It is generally believed that ICT can empower teachers and learners, making significant contributions to learning and achievement In recent years there has been a groundswell of imprest in how computers and the Internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both, formal and non-formal settings Maintaining a capacity to advise national governments on 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 goals.

The main purpose of the Strategy for Information and Communication Technology Implementation in Education is to provide the prospects and trends of integrating information and communication technology (ICT) into the general educational activities.

There are some unavoidable facts in the modern education:

First , the ICT has been developing very rapidly nowadays. Therefore, in order to balance it, the whole education system should be reformed and ICT should be integrated into educational activities.

Second, the influence of ICT, especially internet (open source tool) cannot be ignored in our student's lives. So, the learning activities should be reoriented and reformulated, from the manual source centered to the open source ones. In this case, the widely use of internet access has been an unavoidable policy that should be anticipated by school authorities.

Third, the presence of multimedia games and online games by internet has been another serious problem that should be wisely handled by the educational institutions.

The students cannot be exterminated from this case. They can have and do with it wherever and whenever they want. Schools, as a matter of fact, do not have enough power and time to prevent or stop it after school times. Meanwhile, most parents do not Realities have enough time to accompany and control their children. So, the students have increased opportunities to play multimedia games or online games or browse negative and porn sites. Having been addicted, the students will have too little time to study, and even will not want to attend classes. In such situations, education institutions play an important role to eradicate these problems. One of which is by facilitating the students to will edutainment or educational games. Schools can let their students be familiar with educational games adjusted by their teachers. Besides, they can also support and facilitate their students to have their own blogs on the internet. A lot of Weblog providers are free to the users, such as Word Press. In their blogs, the students can create and write something. like an article, poem, news, short stories, features, or they can also express their opinion by an online forum provided in the internet. They are able to share experiences throughout their blogs to others from all over the world. They can also create innovation in web design that may be out of the formal curriculum content, but it will be useful for their future.

Fourth, the implementation of ICT in education has not been a priority trend of educational reform and the state paid little attention to it. Therefore, there should be an active participation initiative and good will of the schools and the government institutions to enhance ICT implementation at school.

Fifth, the teachers should be the main motivators and initiators of the ICT implementation at schools. The teachers should be aware of the social change in their teaching activities. They should be the agent of change from the classical method into the modern one. They must also be the part of the global change in learning and teaching modification.