

ICT IN EDUCATION**P. Karthikeyan**Principal Durai Vidhyalakshmi College of Education, Keelpudur Village, Chennangkuppam Post,
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Abstract: Information and Communication Technology is creating a new trend in the teaching methodology of education. ICT has a greater impact on the learners side too. It has transformed the role of teachers and learners. Now the teacher has become instructional designers and learners have become self learners. ICT is a greatest supplement to teaching and learning. This paper elaborates about the significance of ICT in education

Keyword: Information and Communication Technology , methodology , elaborates , education.

i)INTRODUCTION

Information and Communication Technology (ICT) is the most significant challenge that now confronting Education at all levels. The world is experiencing a sea change and has been turning towards international exchange, and even towards global unification. The development of modern means of communication has enabled humanity to share scientific and technological progress on a very large scale. Developments in ICT will open up new and cost/effective approaches for expanding the reach of education to children, youth as well as to those who need continuing education to meet the demands of fast-changing nature of occupation and life-long education. An important focus in initial teacher education must be on quipping futures with a pedagogy, which enables them to integrate relevant technology with the process of teaching and learning. The dimensions of ICT would help teachers to develop their capacities for integrating and developing ICT related courses. ICT is being considered as the technology of having far reaching consequences in the field of education where in the whole concept of transactional principles and the focus undergo a change in respect of centeredness of education towards child and learning principles, its effect and efficacies. It focuses on interactive multi-media instructional strategies for teaching – learning process.

NATURE

“The destiny of India is now being shaped in her classroom Education is a unique investment in the present and in the future” and recommended that education should provide people with an opportunity to reflect on the social, economic, cultural, moral and spiritual issues facing humanity.

As observed by Bill Gates, “The first principle for any technology is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will just entrench the inefficiency”. ICT has a potential to promote

increased community involvement and can be used to teach about the technology itself, helping people acquire the skills and competencies needed for the future life. The government plays the central role. In the absence of a comprehensive scheme to provide computer access to teachers, the full potential of ICT will remain untapped.

NEED OF ICT

ICT should become a part of all the activities of the school. The role of schools is to enable student use, explore information through emerging technology, independent learners and be responsible and co-operate in a world where tasks and responsibilities are changing fast. Students are stimulated to use IT in an atmosphere of equality between the sexes in order to promote gender equity which is a national concern. ICT has wide and varied scope in education.

SCOPE OF ICT

The information and communication technologies have made their impression on the whole educational environment. Therefore ICT,

- Promotes the ongoing education
- Strengthens Pre-service and in-service
- To achieve their employment expectations
- Contribute to the development of their trades services
- Use of Computer-based training methods
- Supports and helps in integration of disabled and out of school students
- Distance Learning Programmers of the education Institutions
- Develops Educational Management research
- Networks among Educational Institutions

Educationist need to grab this opportunity and incorporate changes in relation to infrastructure, connectivity, content and teacher capability, orientation,

training and retraining. The major opportunities lie in the areas of
 Training of Teachers
 Transaction of Curriculum
 Infrastructure and Resources
 Adaptability and Diversity
 Media Culture and Evaluation Patterns
 Management Strategies

As per Margaret Riel and Kathleen Fulton at 1998, computer technology can be viewed as effective vehicle “To transform Classroom learning into learning communities with students, teachers and community members all playing a vital role in directing the Course of Educaiton”.

DIFFERENT FORMS OF ICT

ICT encompasses digital electronic devices which include computers, CD players, Cellular Telephones and Satellite broadcasting and analogue devices confined to conventional radio broadcast technology and audio, such as Tape Recorders. Thus ICT tools could be classified as

- Audio Form – Audio Tapes and Radio.
- Visual Form – CDs, Websites and S/W Packages and Audio Visual Form – Television, Video Films, Multimedia Software's etc.,

FUTUROLOGICAL PERSPECTIVES OF ICT

ICT has changed a role of teachers a facilitator, supervisor and guide as students can avail the knowledge and information from application of various forms of ICT. Students can take advantage of ocean of knowledge and information available to them through interconnectivity. ICT will have more of cross-curricular implications, facilitating and enhancing agent rather than one specifically structured around individual subject.

ROLE OF SYSTEM ANALYST

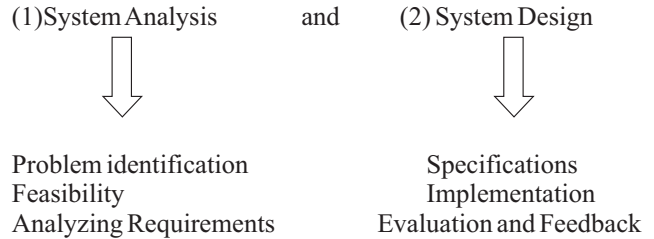
System is part of the universe under study. That is every system has a boundary within which it lies and outside the system is environment. The five characteristics of a system are

- 1. Basic elements
- 2. Relations and organization
- 3. Objective
- 4. Activities and
- 5. Phases of operation

System Analysis is concerned with

- a) Exploring
- b) Analyzing
- c) Executing and
- d) Evaluating

There are two main steps



System Analysis is a difficult task and it requires a multifunctional personality. Some of the following rules:

- An Agent of change
- A Motivator
- An Organizer
- An Architect
- An Intelligent Sales Person

OBJECTIVES OF TECHNOLOGY

Technology is a tool at the disposal of teachers for their administrative functions as well as for helping the purpose of educational objectives.

The objectives of utilizing technology are for

- By helping them to communicate with the people their ideas and research resources on the internet
- To meet the demands of the students
- Developing Student Comfort and Confidence Level
- Problem solving and Critical thinking skills
- Increasing Scope for Transition
- Providing new ways of Learning, Teaching, Carrying out Projects, Assignments etc.,
- Educator should play an integral decision making role.
- The education community values debate around reasoned ICT issues

TYPES OF LEARNING AND THEIR GOALS

There are nine types of learning. They are as follows:

- 1. Perceptual Learning
- 2. Stimulus – Response Learning
- 3. Classical Conditioning
- 4. Instrumental Conditioning
 - a. Reinforcement – Positive and Negative
 - b. Punishment
- 5. Motor Learning
- 6. Relational Learning
- 7. Spatial Learning
- 8. Episodic Learning
- 9. Observational Learning

There are four types of vital goals. They are knowledge, skills, dispositions and feelings

KNOWLEDGE	INFORMATION
SKILLS	Basic Academic Skills – talking Scientific and Technical Skills – Observation Social Skills – Co-operation Personal Relationships – Give and take
DISPOSITIONS	Habits of mind – Predicting Approaches to work – Reflection Preferences Active/Passive Strengthening & Weakening – Discouraging
FEELINGS	Setting Realistic Expectations Dealing with Success and Failure Appreciating Success Seeking Support Recognizing Moods Deals with Personal Problems

WHAT AND HOW ICT IN EDUCATION?

In knowledge base Economy ICT has a major role to play in enhancing education
To develop traits among students to sustain in knowledgebase Society
To develop ICT Skills and Competencies
To address Problems and issues in existing educational system

WHAT IS ICT INTEGRATION?

For integrating ICT in Curriculum the educational institutions need to carry out experiment in term of pilot study then carrying out necessary modifications to overcome shortcomings. Thus, it requires lot of Perseverance and Commitment of the person and teamwork.

CHANGING ROLE OF TEACHERS AND STUDENTS

ICT enable new learning models that can significantly change the traditional role of teachers and students.

According to Steve Wheeler (2001) identifies a number of changes in the role of teachers, brought about by benefits of ICT, such as

- Shared Learning Process
- Shared Learning Spaces
- Promotion of Collaborative Learning
- A move towards autonomous learning

The “Teachers” and “Students” role is transformed as students become self learner, knowledge manager and learn to be cooperative and teacher being instructional designer, Advisor, Leader, Facilitator, Co-ordinating various activities.

INNOVATIVE USE OF ICT FOR EDUCATIONAL PURPOSE

- Member of online Communities
- Person – to – Person Communication
- Real time called Synchronous
- Like instant Messaging, Audio and Video
- Mailing List
- Web Forum
- Instant Messaging
- Identifying and Setting up Infrastructure
- Encourage Prospective Participants
- Assist Interaction

INFORMATION PROCESSING SKILLS

Using Technology appropriately and ethically and working as part of team and independently
Problem Solving and Critical Thinking
Communication Skills
Technology as a tool and not a subject
Information Literacy
Teaching Students to make Real World Decisions
Learning to understand Interpersonal and Intrapersonal Skills

As a teacher one has to bring the changes in the practices followed, help students to think independently, take decisions and make effective use of technology. Teachers of tomorrow will have to bring following changes:

1. Explore the information and get good results
2. Make teaching learning relevant to their experiences
3. Don't hurry to arrive at solutions
4. Adopt the innovative methods of teaching
5. Problem solving and information processing tactic
6. Creativity
7. Evaluate their own work and take decisions

EXPLORING ICT IN EDUCATION PRACTICES AND PROMISES

A use of computers to assist instruction is referred to as Computer Assisted/Aided Instruction (CAI). As per Taylor (1980), there are three basic ways of using computers in schools. They are

- a) The Computer as Tutor
- b) The Computer as Tool and
- c) The Computer as Tutee

COMPUTER AS LEARNING MEDIUM

As Learning medium Computer has variety of usages as per Taylor (1980). The various ways in which computers can be exploited are:

- I. As a Research Tool
 - a. WWW (World Wide Web)
 - b. CD's
 - c. E-Mail
- II. As a Tool for Problem Solving
- III. As a tool for Development of Creativity
- IV. For Presentations

BARRIERS IN EXPANSION OF COMPUTER EDUCATION

ICT has changed the affairs of world greatly. Education is no exception; it has also been influenced by the expansion of ICT. The use of computers provides us with one of the way by which the quality of teaching and motivation for learning can be probably improved. Looking at the potential and job opportunities ensuing from it, it is imperative to incorporate ICT Education in schools and universities. Higher Education are preparing high quality human power in this field for future growth we need to prepare a sound bas at the school level.

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Teacher Competencies
Attitude
Funds
Trained Personnel
Language
Time
Infrastructure
Continuous updating and renewal of courses and training programs

ISSUES AND CHALLENGES

A part from the various impediments like Teacher Training Input, Curricular Changes, Attitude of teachers, Community Involvement, Resource Generation one has to think about the various issues and challenges which are expected to hamper the progress

As per Wood Head (2000) schools are not hi-tech electronics firm the purpose of education in the 21st century is exactly what is was in the 19th & 20th centuries to initiate the young into those aspects of our culture upon which their humanity depends and what is wrong with the formality of the traditional classroom? If formality means structure and purpose, then formality is to be applauded.

As per compared to the other professions, teaching has been found to be least adaptive, leaving itself expose to the condemnation made during the course of the review since independence.

An important understanding must be made about the purpose of IT in teacher education and teaching.

The school plays an important role in the Socialization of young people and building cohesion in the society.

ICT are as

Lack of availability of Hardware/Software.
Lack of familiarity, Skills and Knowledge.
The Perceived expenses of ICT

Researchers in the field of Computer Education and ICT have made significant contribution towards Qualitative improvement in Education. ICT has brought a revolution in all fields in General and Education sector in particular.

What required is that the willingness for skills acquirement on the part of teachers and as well as principals.

CONCLUSION

By the words of Rabindranath Tagore "Tomorrow's history will begin with a chapter on internationalism and we shall be unfit for tomorrow if we retain any narrow customs or habits that are contrary to universalism".

According to the words of Dr. B.R. Ambedkar "No Plan for the future development of the country can be deemed to be complete which does not provide for technical and scientific training". This is the age of Machine and it is only those countries in which technical and scientific training has risen to the highest pitch that will survive in the struggle that will commence when the war is over, for maintaining decent standards of living for their people.

The use of information and communication tools such as E-Mail, Fax, Computer, Internet, and Video

Conferencing overcomes barriers of space and time, and opens new possibilities for learning.

To make use of such potential technologies for effective learning, the teachers and teacher educators need to be trained and equipped with ICT Skills.

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