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ICT: BRINGING DIMENSIONS TO EDUCATION

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Abstract

This paper focuses on the role of ICT in education making dynamic changes in society and influencing all aspects of life. Information and Communication Technologies (ICT) that are becoming increasingly pervasive in societies around the world are also reaching schools it adds value to the processes of learning, and in the organization and management of learning institutions. The Internet is a driving force for much development and innovation in both developed and developing countries. Countries must be able to benefit from technological developments.A shift in the role of a teacher utilizing ICTs to that of a facilitator does not obviate the need for teachers to serve as leaders in the classroom Thus, nowadays Knowledge of ICT and skills to use ICT in teaching learning has been gained importance for teachers.

This paper attempts to analyze the role of ICT in education as an innovative learning tool and opening new vistas of learning. ICT is considered a critical tool in preparing and educating students with the required skills for the global workplace. It educates students so that they can continually adapt to a work world of continuous technological innovations, and makes it easier for students to access knowledge. ICT is regarded as an engine for growth and tool for empowerment, with profound implications for education change and socio-economic development.

Key words: *ICT, modern world, innovation, technology, multimedia, learning environment*

INTRODUCTION

'ICT is not only the future of our children's' education it is the present; and we need to make the investment in ICT now!' **Walter Lockhart**

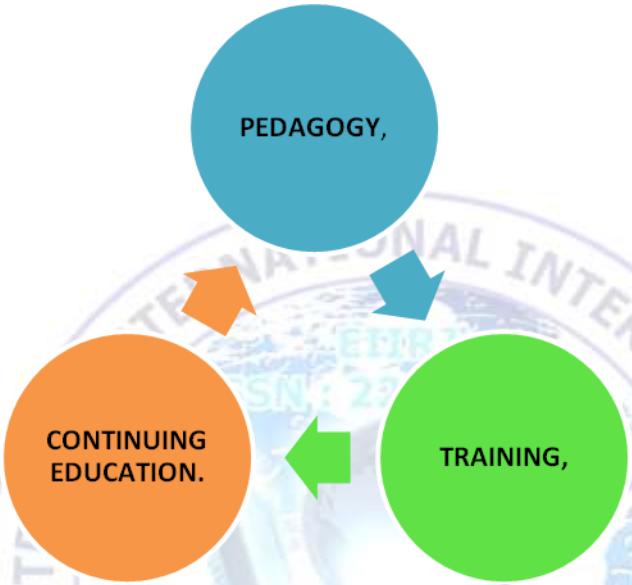
In this era of globalization young generation is expected to become active participants in the surrounding using complex communication network for enhancing information. The world today in techno-world and the students of today can truly be Next Generation or Net Generation. Use of ICT in school will increase the opportunities for students to gain experience in the use of communication work. Technology based education will give the students more extensive and choice of concerns.

It is the technology which has really connected people living all over the world and has turned the planet earth into a global village. The ways ICTs have been used in the education can be clearly divided into two broad categories:

(1) ICT for Education and

(2) ICT in Education.

ICT for education refers to the development of information and communications technology specifically for teaching/learning purposes, while ICT in Education involves the adoption of general components of technologies in the teaching process (more specifically, often for the training of teachers in the use of technology for teaching (Olakulehin, 2007). Often ICT is seen as indispensable tool to fully participate in the knowledge society. ICTs need to be seen as "an essential aspect of teaching's cultural toolkit in the twenty-first century, affording new and transformative models of development that extend the nature and reach of teacher learning wherever it takes place". The demand for education in developing countries like India has skyrocketed as education is still regarded as an important bridge of social, economic and political mobility (Amutabi and Oketch, 2003). ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. It can be used as a tool to overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome time and distance barriers (McGorry, 2002). In a similar vein, UNESCO (2004) classifies ICT in education into three broad categories:



Pedagogy is focused on the effective learning of subjects with the support of the various components of ICT. Olakulehin (2007) emphasizes that the pedagogic application of ICT involves effective learning with the aid of computers and other information technologies as learning aids, which play complementary roles in the classroom, rather than supplementing the teacher.

ROLE OF ICT IN MODERN WORLD

Today technological advancement has reduced the space and distance of our world significantly. Technology has connected people living all over the world and has turned the planet earth into a global village.

Today's generation is on-line population and access is through a variety of means such as computers, Television and Mobile phones.ICT is increasing in importance in people's life and it is expected this trend will continue to the extent that ICT literacy will become a requirement for people's work, social and personal life. We must provide our students with relevant and contemporary experiences so that they can successfully engage in technology and prepare them for life after school.

ICT AND EDUCATION

The use of ICT in education will speed up the pace of learning, improve the quality of education and will create awareness by adding a dimension to learning.

This scenario of class-room needs to be changed. Information and communication technologies are the keys for unlocking new possibilities to envision modern education.

TEACHERS AND ICT

Teachers play a significant role in integrating it in learning process. Unless teachers stand out as models in the classes, it is not possible to prepare a new generation of ICT literate students. Traditional teachers need to modify their role so that they can help the students to construct knowledge rather than to reproduce a series of facts.

Today's teachers are required to be:

- Facilitators, helping learners to make judgments about the quality and validity of new sources and knowledge
- Open-minded, analytical and independent professionals
- Active cooperators and collaborators
- Mediators between learners
- Providers to reinforce understanding

For teachers to be able to integrate the use of ICTs into their lessons, a variety of skills need to be developed:

- Creativity
- Flexibility
- Logistic skills
- Skills for project work
- Administrative and organizational skills
- Collaborative skills

A technically competent teacher is able to:

- Evaluate and use computers and related ICT tools for instruction
- Create effective computer-based presentations

- Search the Internet for resources
- Integrate ICT tools into student activities across the curriculum
- Create multimedia content to support instruction
- Create hypertext documents to support instruction
- Demonstrate knowledge of ethics and equity issues related to technology
- Keep up-to-date as far as educational technology is concerned

ICT OPENS NEW VISTAS OF LEARNING

Equip Learners for Life in its Broadest Sense-Learning should aim at helping individuals to grow and develop on intellectual, personal and social front. So that they can as active citizen contribute in nation's growth and at the same time flourish as individuals by securing a position in this diverse and changing society.

Knowledge Network for Students- Students should be encouraged and motivated to build communication with others so that knowledge can be shared and learning can be enhanced. The ICT based techniques like blogs, e-forum, chat room, e-discussions, group offers number of opportunities to establish knowledge network among students.

Promotes Active Engagement of Students -The chief aim of education is to facilitate the student for independence and autonomy. This can be done if porpoise of learning strategies and practices develop positive learning disposition and confidence to enhance and improve their own learning. ICT with its tools provides many avenues and modes of actively engaging students to widen their scope of learning.

Availability of Quality of Educational Material -ICT will help students to access the internet resources for educational resources. It has the potential to increase the availability of quality education material. ICT based interactivity and global reach allows sharing of knowledge, material despite the geographical distances of individuals.

ICT Enhancing Learning Process- Today ICT enhances the process of learning anytime and anywhere. All educators at all levels, who are part of the process for preparing students for the information age, have a challenge of introducing and integrating ICT into education as ICT enhances the learning process and helps students of all levels immensely.

ICT for Anyone and Everyone

- A student can be benefited by using ICT according to his needs.

- Due to ICT, the failure factor is reduced in a child.
- It motivates and stimulates learning.
- Knowledge is provided in advanced, innovative and interesting way, which helps the student to understand better.
- ICT provides a chance to student to seek and access higher level of knowledge.
- Encourage students to explore.
- Encourages and motivates the students to try new ideas without the fear of failure.
- Student can access it according to his convince.
- It helps students with special needs.
- Provides an opportunity to the teachers to analyze their way of teaching and improvise it.

With the use of ICT in education the concept of class-room teaching will get a face lift. The traditional class-room with teacher in control and student as a passive learner will change and there will be a shift in teachers' role.

CREATING NEW CULTURES

From ancient time till today educational system has changed drastically but during the last three decades, the changes in educational environment have been phenomenal. The model, focus, role of the learner and technology has been changed from traditional instruction to virtual learning environment as depicted below:

CHANGES IN TEACHING- LEARNING ENVIRONMENT			
MODEL	**FOCUS**	**ROLE OF LEARNER**	**TECHNOLOGY**
TRADITIONAL	TEACHERS	PASSIVE	CHALK& TALK
INFORMATION	LEARNERS	ACTIVE	PERSONAL; COMPUTER
KNOWLEDGE	GROUP	ADAPTIVE	PC+NETWORK

ICT Enhancing Teaching and Learning Process

Shifting the emphasis from teaching to learning can actually create a more interactive and engaging learning environment. This new environment also involves a change in roles of both teachers and learners. The role of the teachers will change from knowledge transmitter to that of facilitator, knowledge navigator and sometimes as a co- learner. The new role of teachers demands a new way of thinking and understanding of the new vision of learning process. And the learners get more than one ways to learn. Learners will have more responsibilities of their own learning as they seek out.

CHANGES IN TEACHER's ROLES	
FROM	**TO**
Transmitter of Knowledge	Guide & Facilitator of Knowledge
Controller of learning	Creator of Learning Environment
Always Experts	Collaborators & Co-Learner
Learning to use ICT	Using ICT to Enhance Learning
Di-active / Expository	Interactive / Experimental / Exploratory

CHANGES IN LEARNER'S ROLES	
FROM	**TO**
Passive Learner	Active Learner
Reproducer of Knowledge	Producer of Knowledge
Dependent Learner	Autonomous Learner
Solitary Learner	Collaborative Learner
Solely Learning Content	Learning to Learn / Think/ Create & Communicate

CHANGES IN CURRICULA & DELIVERY	
FROM	**TO**
Memorizing Fact	Inquiry Based
Artificial Teaching Expression	Authentic Learning
Rigid Delivery	Open & Flexible Delivery

CHANGES IN MEDIA APPLICATION	
FROM	**TO**
Single Sense Stimulation	Multi Sensory Stimulation
Single Media Application	Multimedia Application
Delivery Information	Exchange of Information
Monologue Communication	Dialogue & Collaborative
Analogue Resources	Digital Resources
(Fixed Time & Space)	(Any Time & Anywhere)
Single Path Progression	Multi Path Progression

Emerging ICT Trends in Education

ICT encourages self-learning environment and it makes understanding the curriculum interesting and easier ICT education can be encouraged by following trends:

Learning through Internet

Few decades back the students used to do traditional research like conventional libraries, archives for publication, newspaper and books for seeking information. With the advent of internet the scenario is changed and though many still use the traditional method but internet has become one of the most powerful education tools. It not only provides vast information but is also reliable and credible.

Mobile learning

Mobile learning tools has come to existence due to mobile phones and computer. Today mobile phones are no longer is a luxury but has become a necessity and half the world own a mobile phone or has access to it. Mobile learning tool is sure to make a significant impact on learning process due to its easy availability and low cost.

Distance Education

This mode of education has vast scope as it is anywhere, anytime connectivity. A student is free to study at his convenient time all he has to do is log into distance learning university. In a country like India where universities are confined to big cities and villages still suffer the dearth of

good education institutes, distance learning is a powerful tool with its mass reach to remote areas also.

Education through Social Network

Social networking tools like Facebook, Google Docs etc. are frequently used by students for educational purposes. Students create study groups and exchange education resources; they even build on-line learning community. Through e-learning mates, critical analysis, interpretation reference etc. Students learning experience is enhanced and the desire to explore finds encouragement.

ICT for special children

Although the use of ICT in mainstream education has its origins in the 1970s, it has only been in recent years that the government has recognised the importance of and paid special attention to the use of information and communications technologies (ICTs) in special educational needs (Stevens, 2004). The current emphasis on inclusion (Dysonet al., 2004; Ofsted, 2004), and the ever-advancing technologies have stimulated much interest in using various ICT applications for both individualized learning and for integrating students or pupils with disabilities into a mainstream school environment.

Thomas (1992) felt that ICT could bring certain benefits to students with emotional and behavioural difficulties. He regarded it as an "enabler", whereby ICT can facilitate access by students to learning which increases motivation, fosters self-competition and confidence and improves self-esteem. There are other benefits of ICT mentioned in the literature also, including its role in rehabilitation of disabled people. Midgley (1993) pointed out that there is a consensus that one of the most useful forms of vocational rehabilitation for many people with disabilities is training in the use of ICT.

Conclusion

In the coming years the thrust will be on the use of ICT to strengthen the system in the mode of opens and distance learning. Many will become specialists in the use of distributed learning techniques, the design and development of shared working spaces and resources, and virtual guides for students who use electronic media. Ultimately, the use of ICT will enhance the learning experiences for children, helping them to think and communicate creatively. ICT will also prepare our children for successful

lives and careers in an increasingly technological world. Teacher has to adapt continuous professional development in the educational uses of technology. In this sense, teachers have to be ready to make use of the possibilities that ICT offer, such as different learning contexts, focused on the students, presenting them with several types of interaction, offering different degrees of control of their own learning, adapting to their personal interests, promoting collaborative tasks and developing autonomy in their work and study .

In addition, it is necessary to be proactive and to develop a stronger understanding of future learning needs and future learning environments. Prospective work on ICT-enabled learning would help to grasp the opportunities offered by ICT to prepare for learning in the 21st Century that embraces digital technologies for better learning, for better assessment of learning outcomes and achievements, for better teaching and for better social inclusion.

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