

**RESEARCH PAPER****A Comparative Study of Role of ICT to Achievement of Teaching and Learning****Aloke Mondal**

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Email: alokemondal88@gmail.comReceived: 10th March 2019, Revised: 17th March 2019, Accepted: 30th March 2019**ABSTRACT**

Information and communication technologies are the power that has changed many aspects of the lives. The impact of the ICT on each sector of the life across the past two-three decades has been enormous. The impact of ICT for teaching and learning process has become pertinent as it facilitates teaching and learning process, create conducive learning environment, and help learners develop creative thinking and self-confidence. This paper focuses on the use of ICT in schools by students and teachers to support the process of learning and teaching. It describes the way in which teachers could and should facilitate student use of computer system and how they can progress. The use of information and communication technology in schools is taken very seriously by governments and educational systems around the world as it provides access to a variety of information sources, forms and types; help in the preparation of reports and the organization of events; helps to put down the barriers between information held on several systems. This paper thus suggests that effective introduction of ICT in the teaching and learning process is an indispensable means of improving it.

Key word: Implementation of ICT, Computer Aided Instruction, Export system, E-learning.

INTRODUCTION

The world has undergone a sea change in the past few decades. The needs and aspirations of the present generation are not the same as before. It is but very obvious that role and requirements and aims and objectives of educational system have changed also. We require one which will give the present youth the training and skill to use technology and its inventions as a tool for teaching and self-improvement. Technology is developed to solve problems associated with human need in more productive ways. If there is no problem to solve, the technology may not be developed and not adopted. Applying this principle to educational technology would mean that educational institution should create and adopt technologies that address educational problems, of which there are many. A technology will not be adopted by educators where there is no perceived need or productivity gain. This is what Lankshear, Snyder and Green (2000) refer to as the 'workability' principle. Therefore when discussing applications of computer technology to education the question must always be asked, "What educational problem needs to be addressed? This question needs to be asked at all levels of decision making from the teacher planning a programme, to a school administrator purchasing hardware and software, to an educational system officer developing policy and strategic plans. At the teacher level the question becomes: am I satisfied with the educational opportunities I am able to offer children in school classrooms? While teachers should never be completely satisfied, and they will always strive to do better for a productive life in the society. Many educators (Muroch, 2001) believe that what is during the late 1970s and early 1980s, computers became more affordable to schools. The use of ICT in schools is taken very seriously by governments and educational systems around the world. As educational systems move towards the mainstream use of ICT in teaching and learning there appear to be more critical steps and vital ingredients needed for the successful infusion of ICT into educational environments. Although stand alone computers have been in most schools for more than two decades now, networked ICT is relatively new for many schools as they continue to grapple with how to use ICT to enhance teaching and learning environments. This paper focuses on the use of ICT in schools by students to support the process of learning and teaching. It will aim to describe the ways in which teachers could and should facilitate student use of computer systems and how they can progress. This paper begins with a background to the use of computers in schools, touching on the rational

for computers in schools. This leads into a discussion of the professional development needs of teachers for the progression of using ICT in learning and teaching.

ROLE OF ICT IN EDUCATION

1. To increase variety of educational service & medium.
2. To promote equal opportunities to obtain education & information.
3. To develop a system of collecting & disseminating educational information.
4. To promote technology literacy.
5. To support "Distance Learning".
6. To support sharing experience & information with others.

ICT AS A CHANGE AGENT IN TEACHING LEARNING PROCESS

➤ CONVENTIONAL LEARNING PROCESS:

In the process of conventional learning emphasis was given on contents. It follows the particular course structure/syllabus for many years. Accordingly the subject wise textbooks & reference books have been written. By using relevant material to the subject teachers supposed to teach through lectures and presentation. Teachers used their lesson plans, tutorials, different way of assessment to evaluate student performance etc.

➤ COMPETENT COURSE STRUCTURE/SYLLABUS:

It is the need of the day to improve quality & structure of the syllabi by enforcing competency & performance based approach towards it. To include advance technology and practical approach is also on the imp. One such curricula requires.

1. Access to information types & different forms.
2. Student-centered learning though information access.
3. Learning environment concentrated on information access & inquiry.
4. Real life examples.
5. Teachers as mentors rather that content experts.

➤ CHANGE IN THE WAY OF TEACHING & LEARNING:

We discussed ICTs are cause to make a move from a teacher centered learning to competency based learning. Universities are also responsible to make supporting changes in the way students are learning. Traditional way of learning is based on Tran missive modes. Use of ICT in education also affects the way students learning.

The following points are particular forms of learning.

A. Students Centered Learning:

With the help of technologies it is possible to promote transformation of education from teacher centered inst. to students centered inst. these are:

1. Increased use of web as a source.
2. Internet users can select the experts from whom they will learn.
3. Process will become problem based learning.
4. The proliferation of capability, competency and outcomes oriented curricula.

ICTs in education acts as a change agent. It supports independent learning. Students become immersed in the teaching & learning process by using ICT.

B. Student Centered Teaching:

Teaching in all settings encompasses student centered approaches to learning. University faculty incorporate student centered approaches to learning (active, cooperative and project-based learning). Teacher education faculty and professional teaching staff model student-centered approaches to instruction in education course work and field experiences opportunities to implement a variety of technology-enhanced, students-centered learning activities and provided for teacher candidates / interns. Faculty routinely use student centered approaches to learning to facilitate student use of technology.

C. Supporting Knowledge Construction:

The emergence of ICTs as a learning technology unknowingly insists to think on alternative theories for learning. The conventional teaching process has focused on teachers planning and leading students through a series of instructional sequences to achieve desired outcome. This way of teaching follows the planned transmission of knowledge though some interaction with the content as a means to consolidate the knowledge acquisition. It depends on the process of personal understanding. In this domain learning is viewed as the construction of meaning rather than memorization of facts. Use of ICTs provide many opportunities through their provision and support for resource based, student centered learning. It acts to support various aspects of knowledge construction.

The Role of ICT to Achievement of Teaching & Learning Process

We take the same broad definition of ICT to include radio, television, satellite, fax, telephone, computers, mobile, CD-ROMs and internet. The ICTs can be divided into two groups: traditional or old ICTs (namely radio and TV) and the new ICTs (namely the internet and telecommunications). Learning through new ICTs is also called e-learning. Recent studies show the enormous potential of e-learning, especially in industrialized countries. In April 2001, MIT announced that learning materials and syllabi for all courses were being put on the Internet for anyone to use recognizing the power of the internet and that knowledge is for sharing. E-learning has the following advantages:

1. Access to the learning programme any time convenient to the learner.
2. Learners can be at any place to log on.
3. Asynchronous interaction providing participants and tutors with time to prepare their responses leading to-the-point interaction and on-track, thoughtful and creative conversations.
4. Enhanced group collaboration creating shared electronic conversations which can be more thoughtful and permanent than voice conversation.
5. New educational approaches can be used. For example, faculty from anywhere in the world, faculty teams with different specialties can be put together and innovations of teachers can be shared along themselves for improvement and adaptation.

IMPACT OF ICT TOOLS IN TEACHING & LEARNING PROCESS

➤ **ELECTRONIC RESOURCES:**

If the aim is to provide more student-directed learning experiences then students need to be provided with access to extensive sets of resources which is only feasible using predominantly electronic resources. These resources will consist of data files and software applications that may be distributed online or on disc. There is a huge quantity of such resources there are two major problems:

1. Accessing high quality resources.
2. Choosing appropriate resources.

➤ **HARDWARE:**

It is important that we select appropriate hardware for the educational environment in which it is to be used. This will require consideration of the characteristics of the:

1. Users (teachers and students).
2. Physical setting (layout of the classroom).
3. Educational application (that is, what the computer is to be used for).

➤ **NETWORKING:**

Three categories of network scenario should be considered in the use of computer networks in schools. These are:

1. Intra-school network.
2. Inter-school networks
3. External networks (internet).

IMPACT ON THE CURRICULUM

ICT, impacts on educational standards only when there is fertile background for making efficient use of it (Machine, 2006). Earlier it was argued that there is a two-way relationship between ICT and the curriculum where ICT may be used to assist in conveying the curriculum but at the same time may change the content of the curriculum. Further research has shown that the effectiveness in the use of ICT to support learning is a function of the curriculum content and the instructional strategy such that when appropriate content is addressed using appropriate strategies students and teachers will benefit. The impact of ICT on curriculum content may be viewed in terms of:

1. **Declarative Knowledge:** describes objects and events by specifying the properties which characterize them.
2. **Procedural Knowledge:** focuses on the processes needed to obtain a result.

Most educators would perceive the impact of ICT on the curriculum to be positive. With the use of ICT students can use more primary source material and be encouraged to address real problems and develop analytical and interpretive skills. The classroom can be a part of the learning process in an open and continuing dialogue. According to Balanskat, Blamire and Kefala (2006), ICT is said to enable teachers to save time and to increase productivity in such activities as:

1. Access to a variety of information sources, forms and types.
2. Preparing and updating daily lessons;
3. Plans, making hard copy visualizations and handouts for classes, as well as individualized educational plans for slower students and students with disabilities or with special problems;
4. Presenting visual / oral content materials, tasks and questions to the audience.
5. Maintaining grade books;
6. Compiling a data bank of exam questions;
7. Online inspection and correction of students' work on their computers.

CONCLUSION:

ICT can enhance teaching by enhancing what is already practiced or introducing new and better ways of learning and teaching (European Schoolnet, 2004). It has a positive effect on behaviour, motivation, communication and process skills of students and teachers.

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