ICT AS AN INSTRUMENT TO BRING QUALITY IN EDUCATION

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ABSTRACT

In the modern era, the development of any country depends largely on its technical development. It is the technology which converts the world into a global village. Technology replaced the distance barrier in accessing any kind of privilege. Our honorablePrime Minister Mr. Narendra Modi also dreamt of digital India. To transform India into a digital India, it is important to digitize every walk of life. One of the important area is that of Education. As Education is the base for the progress of any country, it is important to integrate technology with it. Information and Communication Technology (ICT) gives broad concept to technology.so this is need of the hour to integrate ICT with Education. National Policy of Education1986 as revised in 1992 also suggests integrating ICT in school Education to achieve quality in Education. There is a broad scope of integrating ICT in education like ICT for effective teaching learning process, Inclusive Education, Open and Distance Learning, management and administration and much more.

Key words: ICT, Quality, Education, teaching-learning, approaches, resources, capacity building

INTRODUCTION

The National Policy on Education 1986, also modified in 1992 emphasizes the need to integrate Educational Technology to improve the quality of Education. The policy statement paved the way for two major centrally sponsored schemes namely Educational Technology (ET) and computer literacy and Studies in schools (CLASS),which further paved the way for a more

comprehensive centrally sponsored scheme i.e. Information and Communication Technology at schools in 2004. The importance of role of ICT in school Education has been also highlighted in National Curriculum Framework (NCF)2005.Role of ICT in improving the quality of Education has been also emphasized in the government of India flagship Programme on Education, Sarva Shiksha Abhiyan (SSA). The Central Advisory Board of Education (CABE) also recommended ICT in schools in its report on Universal secondary Education in the year 2005.

Under the light of these policies and recommendations it has become imperative to take a comprehensive look at the all possible Information and Communication Technology to improve the quality of school Education in the country.

As schools work according to the needs of society and Teacher Education Institutes work according to the needs of school. So, in order to integrate ICT in school Education, it is necessary to integrate ICT in Teacher education as well. Integration of ICT in the curriculum of Teacher Education has also been emphasized in the National Curriculum Framework for Teacher Education 2009.

What is ICT

ICT stands for Information and Communication technology. It refers to the technology through which we can access the information and communicate or share with others. It comprises of all the hardware as well as software resources such as computers, laptops, notebooks, mobiles, telephones, tape recorder, camera, Interactive whiteboards (IWB), projectors and different software applications available to us like simulations, animations, MS office etc. All of these are collectively known as ICT resources. ICT has an important role to play in the fields of management, commerce, IT, media, governance and several other fields. One of such field is Education, in which ICT has included with the vision to bring quality in it.

Need of ICT in Education

- To bring quality in Education by making teaching learning more effective and resourceful.
- To spread Education to the mass level by bringing Education to the doorstep of diverse learners.
- To cater the needs of diverse learners.
- To make Education cost effective.

- To motivate the learners.

- To grab the attention of the learners.

- To provide experiential learning within the four walls of the classroom.

- To provide individualized and self-paced learning.

By knowing the potential of ICT, the Educators and Policy makers thought of harnessing ICT in Education to get maximum benefit from it in order to bring quality in Education.

Paradigm Shift

ICT brought revolutionary change in the Education system .One of the important change it brought is the paradigm Shift. Now the teaching- learning process has been shifted from teacher-centered to student-centered. At the same time the traditional classroom has become ICT enabled classroom, where different ICT resources are used to enrich the regular teaching -learning process.
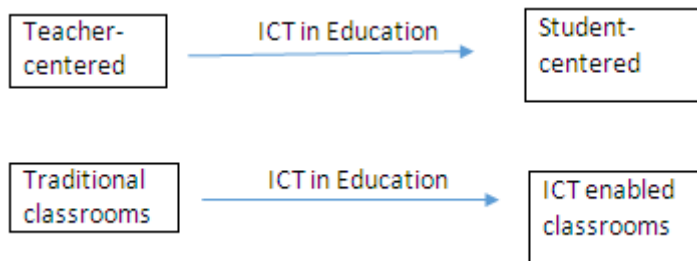

Now the whole education system has been transformed. There is a considerable change in the way of transacting the curriculum, the way of developing a lesson plan, the approaches of teaching- learning, the pedagogies etc. Not only has this, the educational management and administration also relied on ICT for its different work. Now the learners are more independent but this does not mean that it has replaced teachers from the teaching- learning process. The role of teachers is not reduced rather they act more as a facilitator and got ICT as a tool in their hands to make the teaching learning more effective and fruitful.

Computer as teaching-learning object as well as tool

We cannot use computer as a tool unless or until we use it as an object. Computer as an object means to provide the skill to use computers i.e. to provide computer literacy. This means to give the knowledge about computer and its application whereas computer as teaching learning tool means to use computer in the regular teaching-learning in order to make it effective. Here computer supports the regular teaching-learning. But the fact is that without the knowledge of computer and its applications neither teacher nor the students will be able to use it for teaching-learning purposes.

ICT as a teaching learning object

According to National Policy on ICT, ICT literacy can be provided in three levels, which may be adopted according to the local needs. These are the only guidelines and may be adjusted according to the local conditions like the age at which it is introduced may vary, there may be flexibility in the implementation of these guidelines etc. These are the basic guidelines to develop competencies of all students and teachers.

Advance
(Stage 3)

Intermediate (Stage 2)
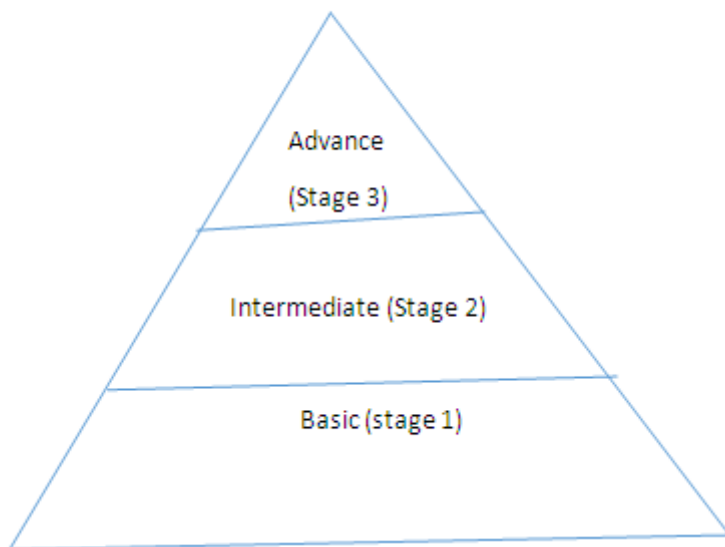
Basic (stage 1)

Pyramid showing the levels of ICT literacy according to National policy on ICT

Stage1: Basic

It includes the basic use of tools and techniques like operating a computer, basic knowledge about retrieving, storing and managing data, knowledge about word processing and to connect, disconnect, operate and troubleshoot digital devices, use of Internet and knowledge about keeping computer updated and secure.

Stage2: Intermediate

Using a variety of Software applications and digital devices to create and manage content and data. Using websites and search engines to locate, retrieve and manage content, tools and resources, install, uninstall and troubleshoot simple software applications etc.

Stage3: Advanced

The skill to use different software applications for their own learning may be developed. They may learn to use database applications, analysis of data and problem solving, computing design, graphical and audio-visual communication. They may learn to carryout researches and projects using web resources, use ICT for documentation and presentation, create and participate in web based social networking sites or groups for cooperative and collaborative learning. They should learn to be aware of cyber security, copyright and safe use of ICT.

ICT as a teaching learning tool

ICT acts as an important tool for enhancing teaching learning process. There are so many ICT based tools, techniques, content and resources available which can be used to improve the quality and efficiency of teaching learning process. Whether it is media, multimedia, simulations, animations or any other ICT resources in the form of hardware or software, one can use them for teaching or self-learning purposes. The availability of such ICT based resources has the potential to change a traditional classroom into an ICT enabled classroom.

Teachers may also develop their own digital resources and share it with others through the digital repositories like National Repository for Open Educational Resources (NROER), swayam ,MOOC etc.

EDUSAT can also play an important role in making teaching learning effective. If it is implemented properly with proper planning then no doubt it can boost the teaching learning process.

ICT based teaching learning approaches in schools

Few of the ICT based teaching learning approaches that can be used in the schools to make the teaching learning process effective and efficient are:

- Blended learning
- Flipped classroom
- Computer based Instruction(CBI)
- Computer Assisted Instruction(CAI)
- The Integrating Technology for Inquiry(NTeQ) Model

Blended learning

Blended learning combines traditional teaching methods with online learning. Any of the traditional methods like problem solving methods, project methodetc. may be combined with online learning. It may be either formal or non-formal. It requires the presence of both teacher and student with certain student control over time, place, path or pace. Student still attend brick-and- mortar school with a teacher present. Here classroom face- to – face interaction is combined with computer mediated activities regarding content and delivery.
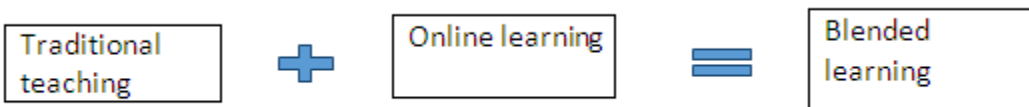
Flipped classroom

Flipped classroom is a type of blended learning which mixes the traditional learning with online learning. The traditional learning takes place in the classroom by delivering instructional content and often online learning outside the classroom. It shifts activities that may traditionally been considered homework in the classroom and classwork at the home. In a flipped classroom, students engage in reading books and drill work in the classroom which was traditionally done in homework and watch online lectures, engage in collaborative online discussions and carryout

research at home which was traditionally thought as classwork. Thus, we see that in a flipped classroom classwork becomes homework and homework becomes classwork.

Home Work   flipped classroom   →   Class Work

Class Work   flipped classroom   →   Home Work
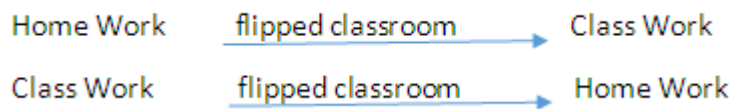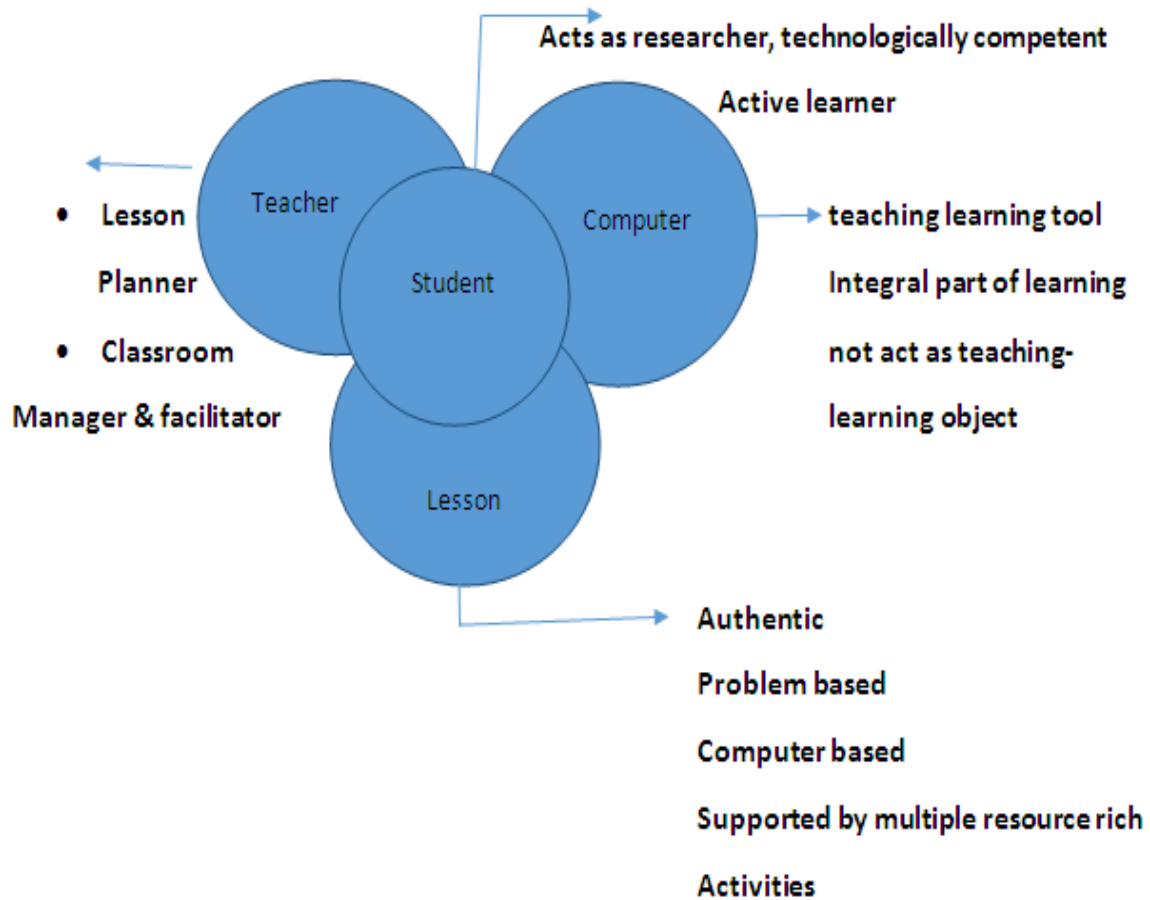
Computer Based Instruction (CBI)

In computer Based Instruction (CBI), teaching learning process is based on computer. The teacher takes the help of computer to enhance their teaching-learning process. Computer is used as a tool to make teaching learning effective. Teacher may use different computer based resources like audio clips, video clips, audio-video clips, multimedia and different software application to support their teaching-learning process. Multimedia increases motivation, caters need of different learning style, increases higher retention, concept clarity and skill development.

Computer Assisted Instruction (CAI)

Computer Assisted Instruction (CAI) is based on programmed learning. The interaction is between student and computer through multimedia. It supports self- paced learning. Students get immediate feedback and it also helps in drill and practice.

The Integrating Technology for inquiry (NTeQ) model

The Integrating Technology for inquiry (NTeQ) model is a ten step instructional approach which is based on computer and integrate computer appropriately. The steps are specified by Morrison and Lowther. A problem based on real life situation is given to the students for finding its solution. The computer is used from the very beginning stage and may be used till final stage. In this approach the activities for which computer is not needed may also be included to achieve specified instructional objectives. This is a student centered problem based and computer based approach.

Teacher

- Lesson Planner
- Classroom Manager & facilitator

Student

Acts as researcher, technologically competent

Active learner

Computer

teaching learning tool

Integral part of learning

not act as teaching-learning object

Lesson

Authentic

Problem based

Computer based

Supported by multiple resource rich

Activities

In NTeQ model teacher, student, computer and lesson, all have its own role to play.

ICT for Inclusion

To achieve the goals of Inclusive Education, ICT can act as a catalyst. Accessible ICT is available to cater the needs of special learners.

Accessible ICT

Accessible ICT are the wide range of assistive and mainstream technologies and formats that enables students with disability to study conveniently in Inclusive Education.

Accessible ICT includes both mainstream technologies and Assistive technologies.

Accessible ICT → Mainstream technology, Assistive technology
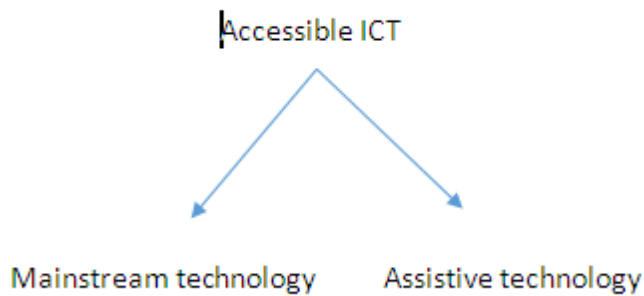
Mainstream technology

Products inbuilt accessibility features which make them accessible for people with different disabilities is known to be mainstream technology. Production cost in this is much lower as it is easier to develop accessibility features and add them to a mainstream product. GPS system, i-phone with mainstream screen reader, web pages and web application like accessible HTML, voice recognition systems etc. are few examples of mainstream technology.

Assistive technology

Assistive technology consists of devices or applications that is used to meet the needs of individual with disability and it is the additional feature in the devices.

Assistive technology should be created and used when mainstream products are not able to meet the needs and they are basically the additional features in the devices which is not added at the time of manufacture. Braille displays, Hearing aids, Screen Readers, Adaptive keyboards etc. are few examples of Assistive technology.

In the National policy on ICT, It has been emphasized that the ICT materials or resources need to be developed in order to cater the needs of persons with disability. One of the example is talking books. Many web pages and applications may be developed for special need learners.

There is also need to develop the software or programs in in different Indian languages so that knowledge and information are made available to the learners using different languages.

ICT for Open and Distance learning

The objective of Open and Distance learning is to spread Education to the mass learners by making knowledge and information available to the diverse learners. e-books, different digital learning resources , digital repositories etc. are developed by the Open and Distance learning

Institutions or Organizations in order to supplement the Education through this learning mode. There are so many Universities like Indira Gandhi National Open University (IGNOU),School of Open Learning (SOL) etc. offering ODL develop their own digital learning resources like learning material, video lectures, audio lectures, online on demand exams, media broadcast through DTH/satellite etc. as student support services.

All Open and Distance learning system provide online services like admissions, examinations, e-Accreditation, grievance redressal etc.

ICT for Administration and Management

ICT in Education may be used for various purposes like to make teaching learning effective as well as for administrative purposes by principal, teachers, administrative staffs and management. ICT for management has also emphasized in National Policy on ICT in Schools.

As a transformative leader, the principal should provide the appropriate environment for the use of technology in the school or Institution. She/he should facilitate the teachers to integrate ICT in their regular teaching learning process.

Administration use ICT to prepare school announcements, reports, letters for meeting with parents, student registration and teachers and staffs employment. They also use ICT to retrieve, store and manage information as well as to take decisions (Selwood, 2004; Afzaal'2011).

ICT applications help them in recording school financial documents such as balance sheet, payslip, audit reports, non-salary grants and stocks keeping as well as keeping student evaluation report and overall student records for future references(kawade,2012;kazi,2012).

Other than the regular teaching- learning, teachers also have to do few administrative works. They have to maintain all records regarding students. They use computer for maintaining cumulative records, records regarding the assessment of students, preparation of report cards, teaching- learning resources, notes, question papers, tests, time table, teaching plans, school reports etc. They can use various valuation software tools like Hot Potatoes and assessment tools like rubric, checklist, rating scales etc. by using computer. They can also use software for marking OMR sheets electronically. They can also analysis and interpret the result using computer application like MS excel and set up websites and online portals for students to access the assignments.

Challenges and Issues in implementing ICT

      (1) Poor capacity building of teachers and students

The teachers as well as students are not as much skilled as it is needed for infusing ICT in the teaching learning process.

      (2) Lack of Infrastructure

The infrastructure of the school or institute must support the integration of ICT in teaching learning process. It needs a suitable space to install the devices.

      (3) Lack of financial support

The school or organization needs financial support to install, maintain, and update the different ICT resources. In the absence of financial support it will not be possible to integrate ICT in the Education system.

      (4) Lack of Resources

The implementation of ICT in Schools is not possible in the absence of proper human as well as material resources. Human resources include competent and skilled teachers, technical staffs etc. and material resources include all the infrastructure, devices like computers with its peripherals, mobiles, telephones, projectors, tape recorders, cameras, interactive whiteboards etc.

      (5) Attitude of Teachers and Managements

If the management is not eager to spend time, money and energy on the Integration of ICT in schools then it is not possible to integrate it.

Suggestions for integrating ICT

- Capacity building of teachers by providing in-service training and pre-service training.
- Improving infrastructure of the school or organizations to support integration of ICT.
- Providing funds to the schools or organizations.
- Providing resources whether human or material.
- Positive attitude of the concerned persons towards its integration in Education.

Conclusion

"The most important thing that schools can do is not use technology

In the curriculum more, but to use it more effectively."

There is lots of talks about technology or ICT in the policies and curriculum but the implementation is not effective. Integration of ICT will be not fruitful in the lack of proper implementation of ICT in schools or Institutions. The work is going on in this area, there is yet long way to go. The need is to assimilate the ICT in the Education system to get a better result in terms of quality Education.

REFERENCES

Goyal, H. K.(2017). *ICT in Teaching-Learning Process.* Meerut ,Uttar Pradesh:R. Lall Book Depot.

Lowther, D. L., Ross, S. M., & Morrison, G. R. (2003). When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom. Educational Technology Research and Development, 51(03), 23-44.

Singh, K. D. and Kaur, D.(2013).*ICT Mediated Education(First Edition).*New Delhi: Dhanpat Rai Publishing Company (Pvt.) Ltd.

Spector, M., Merrill, M. D., Merrienboer, J. V., & Driscoll, M. (2008) Handbook of research on educational communications and technology, Third Edition. New York: Routledge.