Impact of Information and Communication Technology (ICT) in the Teaching-Learning Process

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Abstract: The present 21st century is undergoing a major revolutionary change where technology has intervened in all walks of life be it social, economic, political or cultural. Education is no exception to be adversely affected by the intervention of technology and it has also seen many appropriate changes that has brought a totally new look to the concept of education in the modern times. With the technologically advanced world, the teacher should also keep pace and be aware of the new technologies and the way to integrate them in education so as to enhance learning in their students which is the major aim of education. Today's society has accepted new technologies for fast development and progress due to global demand and competition. New technologies like personal computers, World Wide Web, mobile phones, satellites and Internet are helping us in gathering and dissemination of information globally. Higher education is an important form of investment in human resource development. Multimedia technology is found to be a very useful tool in interaction and communication to multi-language, multimedia communities. With the increasing demand for higher education by the country's youth, we are bound to use new technologies to impart education. The term 'ICT' includes any communication device like software, CD Rom, the Internet, Television and Radio, Image capturing devices including video cameras, sensing, data logging control application, e-content, e-book and multimedia representations. Thus, ICT are the computing and communications facilities and features that support teaching, learning and a range of activities in education.
Keywords: Web Based technology, Virtual classroom, Role of teachers, Self efficiency, Benefits.

INTRODUCTION

ICT refers to a range of electronic tools for storing, displaying, and exchanging information and for communicating. UNESCO defines ICT as, "the combination of informatics technology with other related technologies, especially communication technology. Therefore, the three words, information, communication and technology, used together, have required special meaning in the field of education and have become an integral part of today's teaching-learning process. It is also in facilitating information, dissemination and communication in all areas of education and training.

According to UNESCO, integrating technology into education can help to bring quality education to everyone, everywhere which is a key goal of the education. The citizens of the future must be equipped with sufficient knowledge to keep up with technological advances. Besides, ICT is also being used in facilitating distance learning. It is enabling online designing of courses, online delivery of courses, computer-aided teaching, online assessment, management and networking of a large number of educational institutions.

ICT has revolutionized the entire concept of education, learning and research by offering new opportunities and challenges in creation and dissemination of information by way of Web TV's, Net PC's and Web-based education independent of time, pace and place. Therefore, effective handling of ICT in classroom by teachers will change the very nature of instructional processes. If the teachers use technology in the classroom properly, it will reinforce higher cognitive skills among the learners. They must realize that to enhance the teaching methods they must blend technology with pedagogy in order to gain students attention.

Thus, ICT can improve the quality of education by improving students' motivation, personalizing student learning, enhancing student learning, giving feedback and reinforcement, enhancing the quality of teaching, improving teacher education, improving the efficiency of education planning and delivery and facilitating policy making and management.

OBJECTIVES

1. To establish a close relationship between teachers and students through ICT.

2. To save time, effort, and money for education.
3. To enable classroom teachers for using various audio-visual aids to teach the students
4. To promote equal opportunities to obtain education.
5. To promote technology literacy of all citizens, especially for students.
6. To develop a system of collecting and disseminating educational information.
7. To implement the principle of life-long learning/education.

METHODOLOGY

The study is of descriptive type based on both primary and secondary sources. The facts are collected from number of published and unpublished books, records, reports and journals of government, internet surfing etc. primary source includes information collected by visiting different educational departments of Assam, individuals and organizations.

Web Based Technology (WBT)

The technological developments are penetrating the education system as a challenge to absorb and integrate it for pedagogical purposes. The latest string in this technological advancement is the Internet and World Wide Web which have revolutionized the pedagogical process access the world. There can be five levels of web use in education informational, supplemental, essential, commercial and immersive.

ICT are the computing and communications facilities and features that support teaching, learning and a range of activities in education. It has the essence of transforming information effectively anywhere using the latest modes of technology like computers in synchronous and asynchronous environments that create greater access to information and communication narrow down the gap between the information giants of haves and haves not.

The synchronous environment includes chat, audio-video conferencing, whiteboard, multiuser domain and asynchronous environment includes World Wide Web, electronic mail, mailing list, news groups, streaming audio video etc. At the same time, there can be various possibilities of using web based technology for pedagogical purposes.

Virtual Classroom

Virtual classrooms are a learning environment created in virtual space. In this environment teachers and students are separated by time and space or both. The teacher provides course content through course management, applications, multimedia resources, the internet, video conferencing etc. Students receive the content and communicate with the teacher via the same technologies.

There are many instruction modes in virtual classroom education that includes virtual classroom, hyper text courses, video-based courses, audio-based courses, animated courses, web supported textbook courses, peer to peer courses. Electronic media like a discussion forum, chat room, voice mail, email etc. are used for communication. Assignments by students are submitted electronically and when needed tutors, fellow students or a help desk are available and immediately you can receive the feedback via electronic media. Through this we can improve access to advanced educational experiences and in turn can improve the quality and effectiveness of education even in remote areas of the world by internet [1].

Opportunities of Integrating ICTs in Education

Modern institutions have mission to make teaching learning process effective and interesting. Use of ICT in education, reveals the following opportunities:

Enhanced teaching learning process

The traditional way of teaching learning process can be made more effective and interesting by using ICT technologies. For example, when a teacher uses audio, video or power point presentation in his lecture, the whole class becomes more attentive about the lecture.

Improved availability of study materials

In traditional learning system, students and teachers are limited to get knowledge on a particular topic through printed materials only. But use of ICT facilitates them to get variety of study materials on a particular topic using internet from anywhere and anytime.

Support for Higher or Distance Education and e-learning

The use of ICT supports distance education and e-learning. The use of ICT is higher in e-learning than distance learning.

Enhance enrolment and examination process

Using ICTs in the institutions can improve the admission process by putting admission process by putting admission form online and receiving completed form online. Even they can conduct entrance and semester or annual examination online. This will speed up admission and examination process. It also helps in faster result declaration.

Assist in research activities

Application of ICT in education enriches the research activities. Researchers can get information about recent developments in different segments, collect variety of information on a particular topic, and can generate innovative ideas and new findings. Using

appropriate software we can easily calculate complex calculation and generate variety of graphs.

Role of technology in enhancing classroom teaching

There is growing awareness building amongst policymakers globally and in India on the emerging role of ICTs in enhancing the process teaching-learning in the classroom.

It is a generable acceptable fact that the fruitful implication of ICTs in the classroom is correlated to positive academic outcomes, including higher test scores, better attitudes towards schools, and better understanding of abstract concepts. The radical implication of the new ICT in teaching and learning process to improve learning requires some essential conditions.

- With introduction of new information based technologies i.e. internet and online database, there has been access to enormous quantities of information. This information enables the teachers to develop or improve lesson plan, exchange ideas, obtain information and find free animation and simulation to enliven their lesson.
- Students and teachers must have sufficient access to digital technologies and the internet in their classrooms, teacher education institutes.
- The new ICT helps self-paced learning through various tools such as assignments, tutorials, computers etc. with sensitivity to different learning styles and continuous assessment of student's progress.
- ICT facilitates the educational transaction between providers and users by keeping students well information about the courses, enhancing teacher-learner contact through e-mail, chat sessions etc, enhancing active learning, sharing ideas, providing immediate feedback, encouraging paced learning.
- ICT removes inequalities among people (gender, caste, color, country, religion) in providing education.
- ICT enhances teacher's quality both in terms of teaching and research [2].

Role of teachers

Education is a profession and teaching at all levels has acquired a scientific dimension. It has brought and thrown new challenges before teachers. Updating of knowledge and methodology, acquiring communicative proficiency, designing and applying innovative tools and practices, ability to download material to work online, use of electronic email, use of file transfer for list and assessment tasks and for connecting with class peers and teachers are some of the essential requirements for becoming an effective teacher. Moreover, teaching and research are inseparable aspects of the academic life of a teacher. The major objective of higher education is creation and dissemination of knowledge. A mechanism for the professional development of the teachers, modules for pre-service and in service training of teachers must be provided by the system on a regular basis [3].

It is through the efforts of the teachers that the right values can be inculcated among the students. But for the performance of this task the teachers themselves must learn to ingest the values in their own life style. The responsibility of equipping the teachers for value education is that of the teacher education institutions.

It may be noted that mass media can also be utilized for value education. The teachers should make use of television, tape recorder and other means to inculcate higher values. They should show the pupils' value oriented programmes and draw their attention to the positive values presented in some of the telecasts. They should encourage the students to watch such telecasts and such films which convey right messages regarding values to the children. The teachers have not only to present higher values to the pupils but also to guard against students getting wrong notions through the exposure to the mass media.

Self efficiency

The value education should become the main focus of our educational system. In providing education for values whole of the society should be involved. Motivation is necessary and important to make any teacher committed and give his full effort in teaching his students to enhance learning in them and achieve the aims of teaching-learning process.

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Some of the recommendations about value education are;

1) All teachers should be regarded as teachers of value education and all subjects including physical education can be used for the inculcation of right values.
2) There is need for producing literature especially designed for the value orientation of education.
3) There should be an integrated approach in the value oriented educational programme.
4) There should be foundation courses both at the secondary schools and universities among at giving the children basic knowledge about India, its people and cultural tradition.
5) There is a need for establishing a resource centre for literature on value education.
6) Special schools designed for value oriented education should be established. Every state should have at least one institution which may impart

value-oriented education from nursery to the post-graduated level.

7) Special teacher orientation programmes should be taken up at the state level to train teachers in the effective methods of development of values among students and teachers.

For imparting value oriented education all the teachers must be involved. The environment of the educational institutions must reflect the higher values of life [4].

Benefits of ICT to teachers

One of the most commonly cited reasons for using ICT in education has been to prepare the current generation of students for a workplace where ICT particularly computers, internet and related technologies are becoming more important. Technological literacy or the ability to use ICT effectively and efficiently is seen as representing a competitive age in an increasingly globalizing job market.

In this technologically advanced era, the teachers must involve themselves with the increasing technology in the market. They being the creative heads of the society need to learn and imbibe newer techniques and methodologies so as to increase the retaining, understanding and learning capacity of their students.

There are number of benefits of ICT to teachers which are as follows:

- Teachers with the help of ICT can engage and motivate students to a great degree.
- The internet increases access to automatic data. With the help of this data the teachers is able to analyses the related topic for better understanding of students.
- Data logging and digital video recording allow access to new resources of data in a wider range of experimental setting.
- ICT is quicker and more accurate data collection, saving lesson time and give better quality results.
- Teacher can spread the support time more evenly rather than attempting to give all the support to individual students.
- The teachers can set assignments online, view the work submitted by students and can give instant feedback.
- The teachers can provide resources online, such as documents, presentations, and data and give direct links to website linked to the topics of study.
- ICT acts as the gateway to world of information and enables the teachers to be updated.

In this technologically advanced era the teacher cannot remain immune to the increasing technology in the market. They being in the forefront of the society have special duties and responsibilities than any other profession. They being the creative heads of the society need to learn and imbibe newer techniques and methodologies so as to increase the retaining, understanding and learning capacity of their students. The new trend in education requires well equipped technologically trained teachers and learners to meet the challenges of future education [5].

PROBLEMS AND CHALLENGES FACED BY THE ICT IN EDUCATION

ICTs in education, if implemented, will definitely change the way of our education system. Some of the problems and challenges faced at every level by ICT in education are-

a. There is lack of a sound National ICT and Educational Policy.
b. A huge percentage of people are illiterate. About one-third (25.96%- 2011 Census) of the population in India are still illiterate.
c. There is a persistent brain drain due to under-funding, lack of basic academic infrastructure and research facilities.
d. Teachers' training institutes are not fully equipped to train teachers in ICT and Information Society issues.
e. There is hardly any connection between ICT Policy makers and the Education Sector.
f. Technology alone cannot be a sufficient pre-requisite for promoting gains from ICT [6].

CONCLUSIONS

Higher education now totally rely on ICT for all aspects of their activities; administration, teaching, research, public services. ICT is becoming a crucial part of higher educational institutions. Higher education is now a compilation with the changing learning environment and institutes are trying to determine whether to remain in the competitive market or to accept loss. Therefore, higher education has accelerated due to ICT.

ICT has really enhances classroom teaching. 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 computers, the internet and related technologies, are becoming more and more ubiquitous.

Information and Communication Technology (ICT) exemplified by interactive multimedia and internet is going to be of great significance in raising the quality of higher education. It needs to be effectively integrated into the formal classroom, laboratories, libraries, educational administration and management of admission and examination. It can also be used for training teachers in various refresher courses and orientation programmes.

REFERENCES
1. Kidwai AR; New directions in Higher Education, Viva Books Private Limited, Ansari Road, Daryaganj, New Delhi, 2014; 279-280.
2. Kharbirymbai BB; ICT in Education, Vol.2, EBH Publishers, Nehru Road, Panbazar, Guwahati(India), 2012; 12-14.
3. Kidwai AR; New directions in Higher Education, Viva Books Private Limited, Ansari Road, Daryaganj, New Delhi, 2014; 290.
4. Muthur SS; A Sociological Approach To Indian Education. Vinod Pustak Mandir, Agra-2, 1997; 219-220.
5. Kidwai AR; New directions in Higher Education, Viva Books Private Limited, Ansari Road, Daryaganj, New Delhi, 2014; 282.
6. Kharbirymbai BB; ICT in Education, Vol.1, EBH Publishers, Nehru Road, Panbazar, Guwahati (India), 2012; 116.