ICT in Higher Education for 21st century: ICT as a change agent for education

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Abstract:
Since time immemorial education has been an important instrument for social and economic transformation. Presently higher education in India is experiencing a major transformation in terms of access, equality and quality. This transition is highly influenced by the swift developments in information and communication technologies all over the world. The introduction of ICTs in the higher education has profound implications for the whole education process especially in dealing with key issues of access, equity, management, efficiency, pedagogy and quality. At the same time the optimal utilization of opportunities arising due to diffusion of ICTs in higher education system presents a profound challenge for higher educational institutions. In this education system presents profound challenges posed by; integration of ICTs in various aspects of higher education in the present scenario.

1. Introduction

Over the past few decades, technology has completely transformed our lives in all possible ways. India, a successful ICT powered nation, has always laid a lot of accent on the use of ICT, not only for good governance but also in diverse sectors of the economy such as health, agriculture and education etc. Information and Communication Technologies are defined as all devices, tools, content, resources, forums, and services, digital and those that can be converted into or delivered through digital forms, which can be deployed for realizing the goals of teaching learning, enhancing access to and reach of resources, building of capacities, as well as management of the educational system.

These will not only include hardware devices connected to computers, and software applications, but also interactive digital content, internet and other satellite communication devices, radio and television services, web-based content repositories, interactive forums, learning management systems, and management information systems. Education undoubtedly is one of the most important investments in building human capital in a country and a medium that not only sculpts good literate citizens but also makes a nation technologically innovative, thus paving a path to economic growth. In India, many programs and schemes such as free and compulsory primary education, “Education for All” Movement (Sarva Shiksha Abhiyan), National Literacy Mission etc. have been launched by government to improve the education system. One of the most vital contributions of ICT in the field of education is easy access to learning resources. With the help of ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world. Anytime-anywhere, one of the most distinctive of ICT is its ability to transcend time and space.

One can now use online course study material, at any hour of the day. It dispenses with the need for all learners and the instructor to be in one physical location. ICT has acted as a perfect motivating tool as well since using it as a media to teach includes usages of videos, television and multimedia computer software that combine text, sound and colorful. This allows the students to get more engaged in the learning process.

2. Importance of ICT

One of the most commonly cited reasons for using ICT in education has been to better prepare the students for a workplace where ICT, particularly computers, the Internet and related technologies are becoming more effective in job Market Technological literacy, however is not the only skill that well-paying jobs in the new global economy will require. The potential of ICT to promote the acquisition of these skills is tied to its use as a tool for raising educational quality, including promoting the shift to a learner-centered environment.

3. ICT Initiatives in Education

(1) Online Admission Counseling

Thanks to the ICT initiatives by the Indian Government, the counseling for admission to various professional courses conducted by the Boards such as AIEEE(All India Engineering Entrance Examination) AIPMT(All India Pre Medical Test,) State Boards are now being done online.

(2) Virtual Classroom: Brihaspati

One of the most vital ICT initiatives is the development of Brihaspati, a virtual classroom, an endeavor is by The Indian Institute of Technology, Kanpur, Brihaspati is a web-based e-learning program, which enables instructors to enhance on campus learning by sharing course materials, having class discussions, and making assessments on the web. It can also be used to deploy e-learning content for off campus self as well as mentored learning.

(3) Result on the Net

There was a time when one had to run from post to pillar to get their exam results, however since the past ten years one can easily view exam result of various academic, entrance and recruitment examinations held by several Boards/ Institution/ Commissions (e.g., CBSE, ICSE, State Education board, SSC, ICAI, GGSIPU etc) easily over the internet. Apart from Web one can also get the results through E-mails, SMS and IVRS (Interactive Voice Response System)

4. Initiatives of Use of ICT in Education

India is making use of powerful combination of ICTs such as open-source software, satellite technology, local language interfaces, easy to use human-computer interfaces, digital libraries etc. with a long-term plan to reach the remotest of the villages. Community service centers have been started to promote e-learning throughout the country. Notable initiatives of use of ICT in education in India include:

- Indira Gandhi National Open University (IGNOU) uses radio, television and internet technologies.
- National Programme on Technology Enhancement Learning: a concept similar to the open courseware initiative of MIT. It uses internet and television technologies.
- Eklavya initiative: Uses internet and television to promote distance learning.
- IIT-Kanpur has developed “Brihaspati”, an open-source e-learning platform.

Premier institution like Calcutta has entered into a strategic alliance with NIIT for providing programmes through virtual classrooms. Jadavpur University is using a mobile-learning centre. IIT-Bombay has started the program of CDEEP as emulated interaction through the use of real time interactive satellite technology.

The UGC initiated scheme called “ICT for teaching and learning process” for achieving quality and excellence in higher education. Network facilities with the help of ERNET, Ministry of information and technology, Government of India were installed at UGC office to promote a healthy work culture. Along with this UGC launched a mega programme namely, ‘UGC INFONET’, a network of Indian Universities and colleges, by integrating Information and communication Technology in the process of teaching, learning and education management. The network is manages by ERNET India and almost all the universities are its member.

5. ICT in Teaching Learning

There are various types of technologies used in traditional classrooms.

(1) Computer in the classroom: having a computer in the classroom is an asset to any teacher. With a computer in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new websites.

(2) Class blogs and wikis: There are a variety of web 2.0 tools that are currently being implemented in the classroom. Blogs allow for students to maintain a running dialogue, such as a journal, thoughts, ideas, and assignments that also provide for student comment and reflection.

(3) Wireless classroom microphones: Noisy class rooms are a daily occurrence, and with the help of microphones, students are able to hear their teachers more clearly and learn better.

(4) Class website: An easy way to display your student's work is to create a web page designed for the class. Once a webpage is designed, teachers can post home work assignments, student work, famous quotes, trivia games, and so much more. In today's society, children know how to use the computer and navigate their way through a website.

(5) Online media: Streamed video websites can be utilized to enhance a classroom lesson.

(6) Digital Games: The field of educational games and serious games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students.

(7) Mobile devices: Such as clickers or smart-phone can be used to enhance the experience in the classroom by providing the possibility for faculty to get feedback.

(8) Interactive white boards: It Provides touch control of computer application. These enhance the experience in the class room by showing anything that can be on a computer screen. It is interactive so student can write, draw or manipulate image

6. Benefits of ICT in Education

ICT is a teaching tool. It's a potential for education is significant improving the quality and the standards of students.

6.1 General benefits

- Greater efficiency throughout the school.
- Communication channels are increased through email, discussion groups and chat rooms.
- Regular use of ICT across different curriculum subjects can have a beneficial motivational influence on students' learning.
- Unlock hidden potential for those with communication difficulties.

6.2 Benefits for Teachers

- ICT facilitates sharing of resources, expertise and advice.
- Greater flexibility in when and where tasks are carried out.
- Gains in ICT literacy skills, confidence and enthusiasm.
- Easier planning and preparation of lessons and designing materials.
- Access to up-to-date pupil and school data, anytime and anywhere.
- Enhancement of professional image projected to colleagues.
- Students are generally more 'on task' and express more positive feelings when they use computers than when they are given other tasks to do.
- Computer use during lessons motivated students to continue using learning outsides school hours.

6.3 Benefits for Students

- Higher quality lessons through greater collaboration between teachers in planning and preparing resources.

- More focused teaching, tailored to students' strengths and weaknesses, through better analysis of attainment data
- Improving pastoral care and behavior management through better tacking of students.
- Development of writing skills (including spelling, grammer, punctuation, editing and re-drafting), also fluency, originality and elaboration.
- Development of higher-level learning styles.
- Opportunities to address their work to an external audience.
- Opportunities to collaborate on assignments with people outside or inside school.

6.4 Benefits for Parents

- Easier communication with teachers.
- Higher quality students' reports- more legible, more detailed, better presented.
- Greater access to more accurate attendance and attainment information.
- Increased involvement in education for parents and, in some cases, improved self-esteem.
- Parents are more likely to be engaged in the school community.

7. Conclusion

Information and communication technologies (ICT) have become commonplace entities in all aspects of life. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of Endeavour within business and governance. Within education, ICT has begun to have a presence but the impact has not been associated with strong teachers having high degrees of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings and often this creates some tensions for some teachers and students but with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century.

Reference

1. Mishra, S. & R. C. Sharma (2005). Development of e-learning in India. University News, 43(11), March 14 – 20, 2005.
2. S. Neeru (2009). ICT in indian Universities and colleges: Opportunities and Challenges, Management and Change, Vol. 13, No. 2, 2009, pp. 231-244.
3. UGC (2011). Annual Report 2009-10, New Delhi, UGC.
4. UNESCO (2009). ICTs for Higher Education – Background Paper Commonwealth of Learning, Paris, UNESCO