RESEARCH ARTICLE

ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR HIGHER EDUCATION IN THE DIGITAL ERA

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ARTICLE INFO	ABSTRACT
	The beginning of technologies of learning, discussion media smart edge, Open Educational Resources MOOC and increased awareness for the New Generation have been demanding traditional education system be more open, flexible, and adapted to what students' expectation. Using ICT in education has been widely accepted as an effective way of challenging such changes accredited to technological advances, societal paradigm change, and internationalization. It is based on the belief that the possibility of ICT would bring positive impacts about teaching and learning by providing flexibility, accessibility, and more opportunities for participation and collaboration for the teachers and students. Today, these communication systems have become an integral part of everyday life with circuits spanning the entire world carrying voice, text, pictures, and many other types of information. As become recognized, less expensive, and widely available, it makes people be more interested in connecting them to the internet. Technology and innovation have brought tremendous change in the way students learn. In the global network, newer paths and resources of learning are available, technology acquaintance, and technology implementation in the highest form in their classrooms. For the students to take effective advantage of technology, the teachers have to play an important role as imparters of knowledge and also as facilitators to guide the students in using technology for their assistance.

INTRODUCTION

Nowadays the role of Information and Communication Technology (ICT), especially the internet in the education sector plays an important role in the process of empowering the technology into educational activities. The education sector can be the most effective sector to anticipate and eliminate the negative impact of ICT. Technology (internet) on another side can be the most effective way to increase the student's knowledge.Being aware of the significant role of ICT (Internet) in our lives, especially in educational activities, education authorities should be wise enough to implement strategies to empower ICT in supporting the teaching and learning process in the classroom. ICT is not just the bloom of educational activities, but also it will be the secondary option to improve the effective and meaningful educational process. The main purpose of the Strategy for Information and Communication Technology Implementation in Education is to provide the prospects and trends of integrating information and communication technology (ICT) into general educational activities.

ICT IN EDUCATION: The importance of education in almost all walks of life has increased with the support of information and communication technologies (ICT).

During the past 20 years, the use of ICT has fundamentally changed the working of education. In the current environment-conscious world, the importance of education and the acceptability of ICT as a social necessity has been increasing. The social acceptability of information and communication tools is necessary to improve mobility in society and increase the pitch for equity and social justice. Education as a qualitative development is not confined within the classroom structure. The modern tools of ICT such as eLearning and online practice of learning and getting information are much sought after by students as well as by institutions. The government is spending a lot of money on ICT. In the higher education sector, the National Mission on Education is emphasizing on the role of ICT in increasing the enrolment ratio in higher education. School education in India has a problem of high dropout rate and we need to work on how to decrease this rate.

ICT IN HIGHER EDUCATION: Similarly, in the field of higher education, we need to increase the number of students. Therefore, if we make our learning more engaging with the use of ICT, it can completely change how our education system works.

Also, we should examine the challenges of cost-factor and availability of trained teachers in the process of dissemination of education with the help of ICT. India is developing as a knowledge economy and it cannot function without the support of ICT. The gap between demand and supply of higher education has necessitated governments and institutions to formulate policies for the better use of ICT. And, to bridge the gap, it is necessary to evolve the cooperation between the public and private sectors. The education ICT policy should identify specific ways in which the application of ICT will enhance the educational capacity and the capability of higher education institutions. According to a recent study, innovations such as using Twitter to send messages help disseminate education. In a similar fashion, the use of YouTube in sharing video information will go a long way in disseminating education. During the last decade, higher education has gained importance in India's changing policy landscape as the government realizes that India's strength lies in education.

FEATURES OF ICT: ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies-scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

Anytime, anywhere: One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning).

Access to remote learning resources: Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons, mentors, experts, researchers, professionals, business leaders, and peers all over the world.

ICTs help prepare individuals for the workplace: 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. Technological literacy, or the ability to use ICTs effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalizing job market.

POLICY INITIATIVES FOR ICT IN HIGHER EDUCATION: The Indian policy for developing ICTs as a vehicle for promoting education has been visible since the use of satellite in the early 1970s. The long road traversed till now has led to the launching of a dedicated satellite for education (EDUSAT). Presently, India ranks 45 in the Network Readiness Index. Although the number of Internet users and penetration of PCs is in fractions online educational enterprise started emerging in early 1990s. In addition the National Task Force on Information Technology and Software Development: IT Action Plan Part III- Long Term National IT Policy (GOI, 1999) constituted by the then Prime Minister of India in 1998 gave a fillip to efforts for exploiting rapidly emerging new technologies.

The major emphasis of the Policy was on the expansion of IT education at school and university level including all national level institutions. Consequently, numbers of programmes were developed and initiated for instance Virtual Campus Initiatives of IGNOU in government sector and NIIT Net-varsity in private sector. Recognizing the existing strong educational infrastructure particularly at higher education level consisting of 18064 colleges/institutions and 378 universities, promotion of use and integration of ICTs in education would immensely benefit the socio-economic development of the country.

The following ideas are implemented in higher education level

- ICT related elective courses at the higher education level.
- Equipped institutions with EDUSAT terminals.
- To enhance the ICT infrastructure.
- To provide digital content and resources.
- ICT-enabled practices are given to the teachers.
- Job-oriented courses in ICT will be developed and established for students of the vocational stream at the higher education level.
- ICT for open and distance learning.
- ICT for college management.
- To encourage the public-private partnership.

ADVANTAGES OF ICT IN EDUCATION

Here are some of the benefits which ICT brings to education according to recent research findings.

General benefits

- Greater efficiency throughout the school and college level.
- 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.

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 the 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 learning outside school hours.

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
- Improved pastoral care and behaviour management through better tracking of students
- Gains in understanding and analytical skills, including improvements in reading
- Comprehension.
- Development of writing skills (including spelling, grammar, punctuation, editing, and re-drafting), also fluency, originality, and elaboration.
- Encouragement of independent and active learning, and self-responsibility for learning.
- Flexibility of 'anytime, anywhere' access (Jacobsen and Kremer, 2000)
- Development of higher-level learning styles.
- Students who used educational technology in school felt more successful in school, were more motivated to learn, and had increased self-confidence and self-esteem
- Students found learning in a technology-enhanced setting more stimulating and student-centered than in a traditional classroom
- Broadband technology supports the reliable and uninterrupted downloading of web-hosted educational multimedia resources
- Opportunities to address their work to an external audience

TEACHING AND LEARNING WITH ICT

Teachers' planning is differentiated to meet the needs of all learners in any class including those students who may need extra support, those who are in line with average expectations and those working above average expectations for students of their age. A wide range of styles are employed to ensure all students are sufficiently challenged:

- Students may be required to work individually, in pairs or in small groups according to the nature or activity of the task.
- Different pace of working
- Different groupings of students - groupings may be based on ability either same ability or mixed ability.
- Different levels of input and support
- Different outcomes expected

ICT capability is about having the technical and cognitive proficiency to access appropriately, to use, develop, create and communicate information using technological tools. Learners demonstrate this capability by purposefully applying technology to solve problems, analyse and exchange information, develop ideas, create models and control devices.

They are discriminating in their use of information and ICT tools and systematic in reviewing and evaluating the contribution ICT can make to their work as it progresses. ICT capability is much broader than a set of technical competences in software applications although, clearly, these are important. ICT capability involves the appropriate selection, use and evaluation of ICT. In essence, students need to know what aspects of ICT are available to them, when to use it and why it is appropriate for the task.

INTERGRATION OF ICT IN EDUCATION

ICT integration in education do not broadlytalks about the attentiveness of the teachers in 21st century education and ICT. Training of teachers is serious to the operation and success of the ICT in education programs in India. Higher Education across of the country have implicit the importance of professional development for a diverse country like India, have taken various initiatives to provide a bunch of professional development programs for students and tutors. experiences of encouraging integration of ICT in education in schools and implementing professional development programs for teachers, it has been experimental, that student acceptance of ICT innovation is a way gaining of the technological organization provided in schools followed by the professional development performs and chances for teachers leaving them with a separate drawback to direct the students for optimum technology usage in learning.

DISADVANTAGES OF USING ICT FOR EDUCATION:

The use of the Internet for education is not without problems. Therefore, one should expect the problems to be encountered in using the Internet in teaching to be evolving as well. There are some disadvantages of using ICT for teaching and learning:

Plagiarism: Apart from Web sites that claim to help students write term papers, there are numerous cases of students downloading information from the Net and turning it in for grades. We can minimize this problem by requiring students to cite research sources. There is an online service, Plagiarism.org at http://www.plagiarism.org/, which can assist us in minimizing cases of plagiarism in the class. This service claims to prevent plagiarism by determining if a term paper has been copied from the Internet or not.

Student Privacy: Criminals, marketers, and other persons can easily get information from students when they are online. These could posea danger to students' lives or may even lead to litigation against the school. To avoid this problem, students should be educated on the dangers of giving information to people online. Parents and teachers need to supervise students' online activities.

Low-Income Groups: According to the US Department of Education, over 50% of public schools with a high minority enrolment had a lower rate of Internet access than public schools with a low minority enrolment in 1997. The same was true of instructional rooms in those schools. In addition, students from low-income families may not have computers at home or may have computers at home with no access to the Internet. Consequently, students in low-income communities may be disadvantaged. To reduce the effect that social or economic status may have, we should give Internet assignments that students can easily complete while in school.

If necessary, schools may need to keep computer labs open for longer and/or odd hours. The use of computers at public libraries should also be encouraged.

Preparation Time: It takes a lot of preparation time to effectively use the Net for education. In addition to designing Internet-based lesson plans, we may have to surf the Internet to download lesson plans and adapt them to support the curriculum objectives or visit sites to select those appropriate for classes. We have no choice but prepare in order to help your students become a responsible user of the Internet.

New Administrative Responsibilities: Teaching using the Internet brings to bear a new set of administrative demands on the teacher and the school administration. These include development and implementation of acceptable use policy, training, developing new evaluation criteria as needed, and addressing parents'.

CONCLUSION

Effective use of features and opportunities of ICT supports instructors' empowering of the educational process with active learning, creativity, problem-solving, cooperation, and multifaceted interactions for improving their academic performance, inquiry, and alternative thinking skills. The learning communities of the nation would oversight the rich potentials of the ICT revolution which is reshaping the lifestyle.

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