

Information, Communication and Technology in Education

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Abstract :

For India to emerge as a knowledge super power of the world in the shortest possible time it is imperative to convert our demographic advantage into knowledge powerhouse by nurturing and honing our working population into knowledge or knowledge enabled working population. Higher education systems have grown exponentially in the last five decades to meet the demands of quality education for all. This aspect has further gained momentum due to swift advancements in Information and Communication Technology (ICT).

Information and communication technologies (ICT) have become common place entities in all aspects of life. In the 21st century world is moving rapidly into digital media and information, so the role of ICT in education is very important. Higher education in the country is experiencing a major transformation in terms of access, equity and quality. ICT helps to share availability of best practices and best course material in education. ICT based education causes changes in the educational objectives in the conception of the teaching and learning process. In this regard the paper addresses the integration of ICTs in various aspects of higher education in the present scenario.

Keywords: Higher Education, Information and Communications Technologies

Introduction:

Higher education systems have grown exponentially in the last five decades to meet the demands of quality education for all. This aspect has further gained momentum due to swift advancements in Information and Communication Technology (ICT).

Information and communication technologies (ICT) is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. This broad definition of ICT includes technologies as radio, television, video, DVD, telephone, satellite systems, computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing and electronic mail (UNESCO, 2002).

Social acceptability of information and communication tools is necessary to improve the mobility in the society and increase the pitch for equity and social justice (Shah Md. Safiul Hoque, S. M. Shafiul Alam)

“Technology Integration is the use of technology resources, that is, Digital Cameras, CD-ROMs, Computers, Internet, e-mail, Electronic Publications, Software Applications, and etc. In daily practices.” A very vital question may arise here: what role can technology play in the field of education? Theoretically speaking, technology can enhance the teaching-learning process. helps change the student/teacher roles and relationships, But technology cannot teach; only teacher can teach.

Information and Communication Technology is defined as the technology of creating, processing, storage, retrieval, and transmission of data and information including telecommunication, satellite technologies, electrical and electronic (hard ware) and electronic computing (soft ware), the internet and global systems of mobile communication (GSM), Afolabi et al, 2005). Different concepts, theories and principles can be demonstrated in the class by using ICT. This gives the teacher a meaningful classroom instruction and this enhance the teaching and make class presentation an exiting one. Computer instruction assists science teaching in the following ways, as outlined by Musa (2005).

- ❖ Laboratory data analysis / process.
- ❖ Simulating and modelling.
- ❖ Drill and practice.

❖ Teacher's ability (word processing record keeping).

The ICT brings more rich material in the classrooms, laboratories and libraries for the stakeholders. It has provided opportunity for the learner to use maximum senses to get the information. The ICT can be used in higher education in the following areas

Use of ICT in Teaching:

Most of the teachers use Lecture Method which does not have potentiality of achieving majority of objectives of education. It is a well known fact that not a single teacher is capable of giving up to date and complete information in his own subject. The ICT can fill this gap because it can provide access to different sources of information. ICT provides variety in the presentation of content which helps learners in concentration, better understanding, and long retention of information. The learners get opportunity to work on any live project with learners and experts. ICT provides flexibility to learners which are denied by the traditional process and method. On INTERNET many websites are available freely which may be utilized by teachers and students for understanding different concepts, improving vocabulary, developing Reasoning & Thinking, preparation of competitive examinations like SET, NET, GATE, MPSC, UPSC etc.

Use of ICT in Evaluation:

Traditional pen and paper tests are conducted for evaluating the academic performance of students. These tests are conducted in the group sitting. The content coverage is poor and students cannot use them at their own. These tests are evaluated by the teachers and they may not give feedback immediately to each and every student. It may be due to this that students are unable to know their weakness and do not make any attempt to improve upon them. The ICT can be made use in the evaluation. In evaluation system one can use ICT e.g. online examination in which test is taken online, stakeholders can see their results immediately and can improve themselves, evaluations of answer sheets can be done online in which Answer sheets can be scanned and checked by the teachers which will help announcement of result in time. Marks can be entered online. The primary data can be collected by the use of ICT tools such as email, whats app etc.

Use of Ict In Developing Virtual Laboratory

Laboratory Experiments helps in developing scientific attitude in students. Students can understand concept easily if they do practical work, but most of colleges do not have good laboratory facility and due to big strength of students every one may not perform laboratory work and one cannot perform experiments repeatedly to understand the concept. The Virtual Laboratory can be developed using ICT. It may be made available at the door step of each and every student by uploading it on the Website. If virtual Laboratory prepared then the experiments like dissection of animals, risky practical in chemistry, handling of glass wares, chemicals, safety measures in laboratory etc. can be learned by the learners. Government, colleges, institutes, teachers should take initiative to prepare virtual laboratories.

Use Of Ict In Online Teaching

It is a well known fact that all students do not understand all subjects to the same extent. Some students find subjects, like, Mathematics, Physics, Chemistry, etc. difficult. Consequently students do feel the need of academic support. Therefore, students go for tuition. In Online tutoring the student stays at his home. He logs in to his tutor through the use of Internet and software. He can see the teacher and the teacher can see the student. The student asks the question and teacher replies it by writing on soft board or using power point presentation. This interaction is normally one to one. It has made the academic life of many students easy.

Use Of Ict In Developing Instructional Material

At present there is a shortage of qualified and competent teachers in all most all subjects at all levels. Not only this, even the instructional material available in the print form is not of quality. This is because many authors have written on those topics that they have never read and / or done research. Sometime the information given in the books is also wrong. The book reading is not very enjoyable and does not help students in understanding the concepts and retaining the information. There are many teachers who are well known for the specific subject. Their lectures should be digitalized and made available to all the users. It will enhance the quality of instruction in the classrooms. The teacher can use them in the classrooms and can organize discussion after it wherein the new points can be added both by the teacher as well as students. It will make the teaching effective, participatory and enjoyable.

Use Of Ict In Remedial Teaching

ICT is used to analyze the slow learner's problems and used to organize Remedial Teaching Programme. The Remedial Teaching can be done by the teacher if some common mistakes are identified. It may not be feasible to organize Remedial programme for individual students. At this point, the ICT can be used for giving individual Remedial Programme. It may be Online or off line. The instructional material if designed specifically for meeting the individual needs of students and uploaded on the College or Institute website, whats app group or Blogs etc. Then the ICT can be used for providing Remedial teaching Programme for slow learners.

Teachers Use The Information Technologies to:

1. Present the material in more interesting and attractive way.
2. Guide and help students in searching the qualitative material.
3. Make best use of time.
4. Coach the students.
5. Provide individualized instruction.
6. Direct the students toward cooperative as well as collaborative learning activities.
7. Prepare learning material for students, rather teaching in conventional situations.
8. Diagnose the learning problem of students and help them to overcome.
9. Solve the study problems of students.

Students Use Information Technologies to:

1. Participate in a media revolution, profoundly affecting the way they think about and use information technologies.
2. Improve the ways of learning in new learning fashions
3. Extend the ability and skills of applying their learning in real situation.
4. Working in groups for cooperative and collaborative learning
5. Developing self-learning habits at their own pace and time.
6. Learn with the teacher rather by the teacher.
7. Develop inquiry-learning habits.
8. Use right information at right time to achieve right objective.
9. Review and explore qualitative data.
10. Exchange learning experiences and information with others students and teachers living anywhere in the world. Information technologies facilitate students in their learning process through their active participation on one hand and help teachers on the other hand.

Conclusion :

The information communication technology era opened new horizons for innovations, especially in the field of higher Education. More efficient and creative ways of transmitting knowledge from the start to end user. The teacher need to be creative and innovative in handling his/her class, developing the relevant teaching material, and selecting the appropriate ICT tool.

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