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ICT IN HIGHER EDUCATION: ISSUES, CHALLENGES AND OPPORTUNITIES

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ABSTRACT:

Education from the very ancient time has played a greater role in respect of social and economic change. If we consider specially equality, accessibility and qualitative traits, such type of changes can be observed in the education system in India. This type of change throws a great deal of impact in the sphere of higher education especially in our country to whole world. The problems of infrastructure, economic accessibility, evaluation are existent in our higher education but the quality of higher education may be greater if the problem are overcome in due time. In this paper, the problems at different stage and the solution of those problems and opportunities have been lighted upon.

Keywords: Information and communication technology (ICT),Higher Education, Issues and Challenge.

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Introduction-

Information and Communication technology usually called ICT, is often used as an extended synonym for information technology(IT), but is usually a more general term that stress the role of unified communication and the integration of telecommunication (telephone lines and wireless signals), intelligent building management systems and audio visual system in modern information technology. Different technical parameters related to information help to succeed ICT. In other words ICT is directly connected to broads cast media, video processing and transmission and network based parameters.

ICT is often used in the context of 'ICT roadmap' to indicate the path that an organization will take with their ICT needs.

The optimum use of ICTs in India's higher education system can propel the country to become a knowledge superpower. The innovative use of information technology (IT) in higher education addresses access, equality, and quality.

Objectives: The following objectives were considered for the study-

- To discuss major ICT Learning Categories.
- To discuss the needs and initiatives of ICT in Higher education.

Methodology of the Study:

The study is qualitative in nature and documentary analysis.This work is based on different secondary data like journal, paper, books etc. This work has been conduct at first collected of documents from different sources than synthesizing and analyzing the data and finally making generalization.

Meaning of Information and Communication Technology:

According to united Nations Development Programmed (UNDP) definition, ICTs are basically information handling tools –a varied set of goods, applications, and services that are used to produce, store, process, distribute, and exchange information.

ICT includes both old and new tools. Old ICT tools mainly include radio, TV, and telephone. New ICT tools mainly includes computers, satellite, wireless technology and the internet. These different tools are now able to work together, and combine to form our networked world-a massive infrastructure of interconnected telephone services, standardized computing hardware, the internet, radio, and TV, which reaches into every corner of the globe.

ICTs not only refer to the latest computer and internet- based technologies, but also to simple audio-visual aids such as transparencies and slides, tape and cassette recorders, and radio, video cassettes and TV; and film.

These older and more familiar technologies are referred under the collective heading of analogue media, while the newer computer and internet –based technologies are called the digital media. The differentiation between the old ICT and new ICT is subjective to some extent.

ICT and Education: Liberalization, privatization, and globalization (LPG) coupled with the advancement in IT, have opened up a new demand for skilled manpower, especially in the services sector. In this kind of scenario, education has been identified as one of the 12 main services under General Agreement on Trade in Services (GATS), which needs to be opened up for free flow of trade between countries. Knowledge is expected to become a traditional commodity; and it will be essential that Indian educators keep pace with the change, or else perish in the face of competition from multinational forces in all fields of education and learning, including adult learning. The various kinds of ICTproducts available and having relevance to education, such as teleconferencing, e-mail, audio conferencing TVlessions, radio broadcasts, interactive radio broadcasts, interactive radio counseling, interactive voice response system, audio cassettes, and compact different purposes.

There are three ways in which ICT in education is considered in current thinking.

1. ICT education- It refers to the production of trained manpower to conduct the IT needs of knowledge society. The role of ICT in the education policy of a government is to prepare students with IT skills.

2. ICT assisted education- Now a days, many distance universities and institutions use ICT for the help out printed study materials. ICT mainly includes TV programmed, audio and video tapes. Multimedia contents such as lessons are offered on CDs.

3. ICT enabled education- The total educational programmed and instruction is purely released through ICTs that is using them as a basic medium for the T-L process, it requires ICT access.

Table 1: The Basic Rationales for introducing IT in Education

Rationale	**Basis**
Social	Technology and society are direct related and co-Related .so students are attached to learn.
Catalytic	The features of technology is very much important to improve teaching effectiveness.
Vocational	The fruit of the technology is directly needed for Every job.
Pedagogical	The use of technology is proportionate to learning Flexibility and efficiency.

Source: Cross and Adam (2007)

Major ICT Learning Categories:

In view of ICT, education can be classified into three categories:

- E-learning
- Blended learning

- Distance learning

In addition there are face to face, self paced, and online collaborative learning under major ICT learning categories.

E- learning: is also known as online learning and is commonly associated with field of advanced learning technology (ALT),which deals with both the technologies and associated methodologies in learning using networked and multimedia technologies.

E- Learning has following advantages-

- Reducing time
- To overcome geographical barriers for learners as well as teachers
- Improving association possible by ICT
- Scatter speedy education to target under privileged group
- Balancing house hold life and work life
- Upgrades the education service at international level.

Blended Learning-is the sum total of different approaches to learning. It is usually applicable where several delivery methods are mixed up to delivery particular courses.

Face to Face Learning – It learning implies to learning where conventional classroom occurs. Here lectures, workshop, presentation, tutoring, conference are the main features.

Self-paced Learning-is the accessibility and availability of learners own time and pace. Here web based or CD based courses assignments, projects, etc are the main focus.

Online – Collaborative Learning- is the one where learners and faculty members interacts each other Where(i) synchronous interaction and (ii) asynchronous interaction are actively found.

Distance Learning – It is a type of education, where students work on their own at home or at office and communicate with the faculty and other students via e-mail, electronic forums, video conferencing, chat rooms instant messaging, and other forms of computer based communication. It also known as Open learning. Most distance learning programs include a computer based training (CBT) system and communication tools to produce a virtual classroom. As internet and World Wide Web (www) are accessible from virtually all computer platforms, they are increasingly serving as the foundation for many distance learning systems.

Table 2: Advantages of ICT in education to the main stakeholders:-

Stakeholders	**Benefits**
➢	**Students**
•	Learner-centered approach,
•	Increased access,
•	Flexibility of content delivery,
•	Combination of work and education
➢	**Employers**
•	Developing of a new learning culture,
•	Increased portability of training,
•	Upgrading of employee skills, increased productivity,
•	High quality, cost effective professional development in the workplace.
•	To reach target groups with limited access to
•	Conventional education and training,
➢	**Governments**
•	To support and enhance the quality and Relevance Of existing educational structure,
•	To ensure the connection of educational,
•	Institutions and curricula to the emerging networks And information resources,
•	To promote innovation and opportunities for Lifelong learning.

Source:UNESCO,2002.

Role of ICT in Higher Education:

The use of ICTs in education extends beyond equipping classrooms with computers and an Internet connection. There are a wide variety of ICTs currently available to schools and

universities that can be implemented to enhance students' overall learning experiences in numerous ways. Those schools and universities that have implemented ICTs primarily use this technology to fulfill three objectives:

- **Increase Networking Opportunities** ICTS help connect schools to other schools, as well as individuals within those schools to one another. This ability to network is especially important for students in rural areas and students in developing countries.
- **Provide Distance Learning** with the advent of ICTs, learning has become Web-based. As a result, ICTs have started to replace correspondence schools.
- **Supplement Traditional Learning** one of the most common uses of ICTs in education involves students using software programs such as Microsoft Word to produce otherwise traditional written assignments.

Major Challenges->

The key challenges affecting the utilization of IT/ICT in Indian Higher Education fall broadly into the following categories:

1. Absences of optimum level of knowledge.

2. Technological promptness.

3. Implication is not up to the marks.

4. Linguistic obstructs.

Key Issues of ICTs:

ICTs also have some issues which we must understand .some issues depend upon the use of ICTs. These include:

1. High costing of infrastructure and start- up:-to improve ICT systems the cost of hardware and software becomes very high.

2. Low attention of individual differences: students familiar with ICT take more advantages than those who are not connected with the technological aspect.

3. Low accessibility issue: Noteveryone has equal access; therefore not everyone benefits equally from the use of ICTs. A 100% reach of radio or a 90% reach of TV does not mean that all the listeners or viewers have access to the medium. Timing of broadcast, electricity supply,

socio-cultural factors, poverty, illiterate, time constraints, mobility, and relevance are the key factors influencing access.

4. ICT is only a delivery system:ICT means only to deliver content not expected to behavioral changes.

5. ICT is performance based tools: Learning from ICTs is usually multidimensional in nature and with long-term perspective. Thus, it may take longer time to access performance in comparison to classroom assessment which is spontaneous.

6. Exhaustivetraining requirement: As technologies change, there is a continuous need to train the trainers which may sometimes be resisted by them. Also, since not all teachers are experts with ICT, they may be lax in updating the course content online which can slow down the learning among students. In fact, there is a need to train all stakeholders in ICT.

7. Teaching and Learning are in one line in ICT - Higher dependents on ICTs impacts the process between teacher and students can learn and accustomed to this system. So, students need different ways of understanding.

Major Initiatives in India forprovidinge- content for different courses:

India is using powerful mixture of ICTs such as open source software, satellite technology, local language, interfaces, easy to use human-computer, digital libraries etc. with huge advantages to reach the remotes of the villages.

1. National programme on Technology Enhanced Learning (NPTEL): is the joint initiative of ICT and IIS (Indian Institute of Science) s, it helps e-learning through online web. It enhances the quality of engineering education.

2. EDUSAT: The launch of EDUSAT brought satellite connectivity to large parts of rural India. Indira Gandhi National Open University (IGNOU) is leveraging satellite, TV and internet technologies to offer online courses.

3. Brihaspati: this open sources e-learning platform has been developed by IIT-Kanpur.

4. ERNET- provides communication infrastructure mainly and it also helps services to academic research institutions in India.

5. Gyan Vani- is the mixture of frequency modulation (FM), radio channels which helps broadcast programs by IGNOU and IITs.

6. Consortium- has been given the tasks of e-content for 87 Undergraduate courses (UGC) and 77 Post graduate courses (PGC).

Technology Trends in Indian Universities:

The following characteristics in Indian Universities are:

Digitization of books (e-text books): There is an increased trend towards creation of a digital repository of books to create a digital learning environment for students. The digital version of the books inlaid with text, pictures along with video, simulations, and visualizations help the students to learn the concepts in an interactive way. The National Mission on Education, through ICT, plans to generate new online course content for UG, PG, and Doctoral education. Efforts are already underway to prepare the course content for 130 courses (UG and PG).

Content delivery using IT/ICT: The innovative application of ICT is proportional to successful implementation of higher education. Different media like radio, TV, and satellite are being used in higher educational institutions.

Virtual Technical University (VTU): is trying to give national level education to UG/PG students for successful ICT. It is basically used for science, management, technology and other purpose.

Open education resources: All Indian Council for Technical Education-Indian National Digital Library in Engineering and Technology (AICTEINDEST) is a consortium set up by the Ministry of Human Resources to enhance greater access and generate annual savings in access of bibliographic databases.

Mobility: Now the mobile phones are rich in the feature that they provide more than just voice calls. BlackBerry, iPhone, and other smart devices that have internet access allow students and faculty to perform a wide range of assignments. Tasks like administration, sharing class notes, downloading lectures, instant messaging, and so on, are possible wherever cell phone services are available.

Social Learning: Higher education received different social networking like as blogs, wikis, iTunes, You Tube etc, for influencing ICT. The introduction of smart phones is enhancing mobile learning (m- learning). All these technologies are being used for content delivery, expansion, online videos and podcasting.

The innovative introduction of Web 2.0 tools like blogs, wikis, podcasts, mashups, and social networking communities etc, are used in for upliftment of ICT. To begin with, the initial learning management systems (LMS) like Blackboard, Sakai, Moodle, or Web CT (course tool) were course- centred and teacher-driven. Off late it is becoming more and more learner-centric.

Conclusion: A remarkable change is believed to have observed for the use of ICT in higher education. As a result, the qualitative change occurs. Conventional Education method is being abolished and online and virtual educational methods are in process. ICT not only upgrades the classroom learning, but also help improve e-learning and distance learning. The aspirants of remote area are able to take quality learning by the use of ICT at any time and any place. The use of ICT helps develop a good relation in case of Hardware and Software. Overall, the application of ICT in sphere of education creates a democratic environment.

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