

IMPACT OF IT IN E-LEARNING

Introduction to use of IT in teaching and learning

Information technologies have affected every aspect of human activity and have a potential role to play in the field of education and training, specially, in distance education to transform it into an innovative form of experience. The need of new technologies in teaching learning process grows stronger and faster. The information age becomes an era of knowledge providing sound and unmatched feasibility for discovery, exchange of information, communication and exploration to strengthen the teaching learning process. Information technologies help in promoting opportunities of knowledge sharing throughout the world. These can help the teachers and students having up-to-date information and knowledge. Accurate and right information is necessary for effective teaching and learning; and information technologies are “set of tools that can help provide the right people with the right information at the right time.” Students are independent and they can make best decisions possible about their studies, learning time, place and resources. Students

are able to work in collaborative and interactive learning environments effectively communicating, sharing information and exchanging ideas and learning experiences with all in the environment.

The effective **Use of Technology** in Education has changed the face of education and it has created more educational opportunities. Both teachers and students have benefited from various **educational technologies**, teachers have learned how to integrate technology in their classrooms and students are getting more interested in **learning with technology**. The **use of technology in education** has removed educational **boundaries**, both students and teachers can collaborate in real time using advanced educational technologies.

Technology has helped in the growth of mobile learning and long distance learning. The use of internet technology has enabled teachers to reach students across borders and also students from developing countries have used internet technology to subscribe for advanced educational courses. Many universities and colleges have embraced online education by creating virtual classrooms. Online **education** is flexible and affordable, students can attend classrooms during their free time, and they can also have a chance to interact with other students virtually.

Recent advancements in educational technologies have yielded positive results in our education sector. This new educational technology is supporting both teaching and learning processes, technology has digitized classrooms

through digital learning tools like, computers, iPads, smartphones, smart digital white boards; it has expanded course offerings, it has increased student's engagement and motivation towards learning.

Advantages Of Technology In Education

1. Technology Unlocks Educational Boundaries:

Technology supports Virtual or Online Learning. Unlike physical classrooms, online learning is flexible and students from different geographical locations can attend the same class with no need of traveling from those locations. Advancement in virtual technology has supported face-to-face communication between students and teachers in the virtual world. In this case, students can easily ask their remote based educators' questions using virtual communication tools like **SKYPE**. Online education is a new wave in our education environment and it has made many educational courses and material accessible to anyone in the world. Many colleges and universities are blending their educational systems with online learning tools, this helps students of these institutions learn from anywhere.

2. Technology Simplifies Access to Educational Resources:

Technology helps students gain access to open educational resources. These resources are kept under the public domain and are freely available to anyone over the world-Wide-Web. These educational resources include electronic books (e-books) , pod-casts, digital libraries, educational games, educational videos and instructions, tutorials and much more. Teachers have

embraced video hosting platforms like Youtube, to upload recorded lectures, so that students who missed lectures can access them from anywhere. Also the **use of cell phones for educational purposes**, helps students and teachers access educational information using Edtech Apps . Teachers are also using lesson videos and clips online to learn how other educators are using technology in classroom and education, these techniques and approaches uploaded by other educators promote self-training and they help many teachers when it comes to integrating technology in their own classrooms. Website like **TeacherTube, Youtube, O2 Learn**, are providing free online lessons and videos to students, these videos have been created and uploaded by teachers and experienced educators.

3. Technology Motivates Students: The use of computer based instructions makes students feel in control of what they learn. Students find it easy to learn with technology because **computers** are patient compared to humans. Teachers publish educational instructions on classroom **blogs** or they assign research work via email, and this gives a student time to study on their own and have no fear of making mistakes during the process of learning. Also the use of Gamification educational technologies has increased students interest in learning, teachers use educational puzzles and video games to teach students how to solve different academic challenges, this all process makes students love to learn.

4. Technology Improves Students Writing and Learning Skills: The use of computers in the classroom has helped

many students learn how to write well composed sentences and paragraphs. Computers have word processing applications which students use to take notes in the classroom, these word processing applications have built-in dictionaries which help students auto-correct spelling errors and also correct their grammar in a sentence. Also students using English teaching software and mobile applications like BUSUU. Many students have used BUSUU APP to learn different languages online and they can also get access to grammar guides provided by experienced publishers. Teachers encourage their students to create personal blogs using free blog publishing services like BLOGGER & WORDPRESS, students use these blogs to express themselves and share with friends, this process helps students learn how to write creative blog posts.

5. **Technology makes subjects easy to learn:** Different types of educational software are designed to help students learn various subjects easier. Many students complain that learning *Maths* is difficult, so some of them have decided to use educational *Maths* software like BrainingCamp. Students can use BrainingCamp to apply their Math knowledge and skills to solve different math equations. BrainingCamp.com makes learning *maths* very interesting. Also students use math learning games to learn new skills of solving math equations. Websites like IXL.COM, learninggamesforkids.com, help students of different grades to learn simple *maths* basics. Teachers and students can take advantage of sites like Edalive.com; they create powerful educational software that motivates students to learn in a fun way.

6. **Promotes Individual Learning:** Technological tools like cell phones and internet give students an opportunity to learn by themselves. Many students prefer teaching themselves and discovering content by themselves, this process allows them to test various options to solve a given task at school. Students use interactive educational games and software to develop different academic skills. For example; Art and design students can use Photoshop software to learn different design and editing skills, the process of learning how to use Photoshop is tricky, but the more mistakes and trials a student makes, the better they become at using Photoshop. Also the **use of cell phones** as educational tools encourages students to download educational podcasts which they can listen to while at home.
7. **Supports Differentiated Instructions:** Teachers can use technology to cater for each and every student's needs in the classroom or outside of the classroom. The use of classroom assessment software and performance tracking programs helps teachers plan for each student basing on their performance and learning capabilities. Teachers can be in position to classify students and know their weakness and strength as far as education is concerned. Teachers can use mobile applications like PollEverywhere.com to get student's response on any topic or subject. Social collaboration tools like Piazza.com can help teachers create virtual classroom and assign research work or answer student's questions from anywhere.
8. **Increases Collaboration between Teachers and Students:** The use of advanced communication technologies in education helps teachers reach their

students easily and it also helps students reach their teachers or fellow students in real-time. Teachers can use mobile texting applications like Remind101.com to text students about an upcoming test or to assign them research topics. Educational social networks like ePals.com connect students with experienced educators; social bookmarking sites like Pinterest.com help students collaborate and follow creative teachers and educators from around the world. This flexibility in interaction and communication between teachers and students helps the students improve on their grades.

9. Prepares Students for Tomorrows Technological

Jobs: As the world develops, every job in the future will require applicants to have some technical skills. So the use of technology in education prepares our children for tomorrows advanced working conditions. Students use computers in the classroom to develop creative applications which can be used on cell phones or tablets for educational purposes. The advantages of knowing how to use a computer are limitless, so the more time a students spends using various technological tools at school, the more experienced and creative they become. According to research, the most popular jobs today will be of no value in the next 5-10 years, because technology will automate most of these tasks, so it is better to equip our children with technical skills so that they create their own jobs.

10. Increases Students Innovation and Creativity: Many teachers have discovered that integrating technology in their classroom increases student's engagement in the

classroom. So now they put up technological competitions where students can make small educational technologies like robots, smart-pens, mobile applications and much more. These technological competitions in schools have increased the level of creativity and innovation among students. Technology teaches students how to solve challenges and get ready for more difficult tasks in life.

Learning Management System

With the revolution in invention of technology, information technology, in particular, has brought a tremendous change in the nature of teaching learning at this new century.

LMS refers to Learning Management System, which is a software application that automates the teaching learning, giving instructions and notifications, administration, tracking and reporting of any course offered by the university.

A dynamic LMS should provide the following services to the academic institutions

- Allows synchronous and asynchronous communication among students, teachers and guardians.
- Automates teaching learning process and provides support to the administrative staff to maintain a smooth operation.
- Supports portability of content/instructions and ensures access from the furthest corner.
- Personalizes content and enables knowledge to reuse
- Offers the option of editing and saving materials

More importantly, an LMS should have the capacity of integrating with other enterprise application solutions used by HR and accounting, enabling management to measure the impact, effectiveness, and overall cost of educational initiatives.

Moodle

Moodle is an acronym for '**Modular Object-Oriented Dynamic Learning Environment**' and was originally developed by Martin Dougaimas in 2002. Today Moodle has been adopted by over 230 countries where Moodle communities thrive. As an open source platform, Moodle users benefit from a global community of developers who are actively engaged in improving the user experience.

Moodle is the world's most popular and most used learning management system. The Moodle Learning Management System (LMS) is a flexible, open source and free to download learning management solution. With 100 million users (and growing) and over 100,000 Moodle sites deployed worldwide, this user-friendly eLearning platform serves the learning and training needs of all types of organizations in more than 225 countries worldwide.

Moodle 1.0 was officially released in 2002 and originated as a platform to provide educators with the technology to provide online learning in personalized environments that foster interaction, inquiry and collaboration. In private Moodle sites, educators, trainers and employers can create and deliver online courses to help their audiences achieve their learning goals.

Today, Moodle is used by organizations of all shapes and sizes outside of the education community. Most commonly, Moodle is used by businesses, corporations, hospitals and non-profits for training, online learning and in some cases it is used for extended business processes.

Here is a brief list of everything we've seen Moodle being used for:

- Compliance Training
- Onboarding and Related-training
- Competency-based Training and Management
- Workplace Safety Training
- Online Learning and Continuing Education Opportunities
- Online Course Development
- Product and Service Launches
- Communities of Practice and Communities of Expertise

Edmodo

Edmodo is an educational website that takes the ideas of a social network and refines them and makes it appropriate for a classroom. Using Edmodo, students and teachers can reach out to one another and connect by sharing ideas, problems, and helpful tips. A teacher can assign and grade work on Edmodo; students can get help from the entire class on Edmodo. It is a safe environment. There is no bullying or inappropriate content, because the teacher can see everything that is posted on Edmodo. Also parents can join the class to

bring a level of transparency that is difficult to achieve without technology. All in all Edmodo is a great companion to just about any class.

Edmodo is a cloud-based **learning management** application for teachers to connect and collaborate with parents and students. The solution allows teachers to create academic groups, distribute assignments and homework, schedule online tests and track student performance.

Academic Services

The term academic services may refer to a wide variety of instructional methods, educational services, or school resources provided to students in the effort to help them accelerate their learning progress, catch up with their peers, meet learning standards, or generally succeed in institutions. When the term is used in educational contexts without qualification, specific examples, or additional explanation, it may be difficult to determine precisely what "academic services" is referring to. The terms support or supports may also be used in reference to any number of academic-support strategies. The following are some of academic support bodies:-

INFLIBNET

Information and Library Network (INFLIBNET) is an autonomous inter-university Centre (IUC) of University Grants Commission, Government of India. It is involved in creating infrastructure for sharing of library and information resources and services among Academic and Research Institutions. INFLIBNET works collaboratively with Indian university libraries to shape the future of the academic libraries in the evolving information environment.

This major National Programme was initiated by UGC in 1991 with its Head Quarters at Gujarat University Campus, Ahmadabad. It became an independent Inter-University Centre in 1996. N-list is the major utility service of INFLIBNET aiming to provide instant access to a rich and diverse collection of electronic academic journals to its users. INFLIBNET is involved in modernizing university libraries in India and connecting them as well as information centres in the country through a nation-wide high speed data network using the technologies for the optimum utilization of information. INFLIBNET is set out to be a major player in promoting scholarly communication among academicians and researchers in India.

This network linked libraries of learned institutions like Universities and Colleges in India. It also covered institutions affiliated to CSIR, ICMR, ICAR, DRDO and other more departments. This network is hybrid of satellite based and terrestrial communication system. It has been designed with the services offered like online services, online catalogue, database services, electronic document supplies and collection development etc. A national node has been set up at Ahmedabad to coordinate the network activities. The INFLIBNET has offered its services to more than 200 Universities, 7500 colleges, 30 research institutes and more than 250 libraries affiliated to various organizations. Its central node has been connected to regional nodes, which hold Union Catalogue and databases. It is a national Centre serving research institutes, academic institutes and also coordinating other networks.

INFLIBNET provide following facilities:

(i) Catalogue based service,

(ii) Database service,

(iii) Document supply service,

(iv) Collection development,

(v) Communication based services.

(a) Referral services,

(b) E-mail services,

(c) Bulletin Board services,

(d) Audio/Video services,

(e) Conferencing services.

The main aim of INFLIBNET has been to establish a pool to share the electronic resources and making their optimum use. Its object is to develop infrastructure of libraries and information Centre's to provide maximum service to their users.

NPTEL

NPTEL is an acronym for National Programme on Technology Enhanced Learning which is an initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and Indian Institute of Science (IISc) for creating course contents in engineering and science. NPTEL as a project originated from many deliberations between IITs, Indian Institutes of Management (IIMs) and Carnegie Mellon University (CMU) during the years 1999-2003. A proposal was jointly put forward by five IITs (Bombay, Delhi, Kanpur, Kharagpur and Madras) and IISc

for creating contents for 100 courses as web based supplements and 100 complete video courses, for forty hours of duration per course. Web supplements were expected to cover materials that could be delivered in approximately forty hours. Five engineering branches (Civil, Computer Science, Electrical, Electronics and Communication and Mechanical) and core science programmes that all engineering students are required to take in their undergraduate engineering programme in India were chosen initially. Contents for the above courses were based on the model curriculum suggested by All India Council for Technical Education (AICTE) and the syllabi of major affiliating Universities in India.

Objectives of NPTEL

The basic objective of science and engineering education in India is to devise and guide reforms that will transform India into a strong and vibrant knowledge economy. In this context, the focus areas for NPTEL project have been i) higher education, ii) professional education, iii) distance education and iv) continuous and open learning, roughly in that order of preference.

- Manpower requirement for trained engineers and technologists is far more than the number of qualified graduates that Indian technical institutions can provide currently. Among these, the number of institutions having fully qualified and trained teachers in all disciplines being taught forms a small fraction. A majority of teachers are young and inexperienced and are undergraduate degree holders. Therefore, it is important for institutions like IITs, IISc, NITs and other leading Universities in India to

disseminate teaching/learning content of high quality through all available media. NPTEL would be among the foremost and an important step in this direction and will use technology for dissemination.

- India needs many more teachers for effective implementation of higher education in professional courses. Therefore, methods for training young and inexperienced teachers to enable them carry out their academic responsibilities effectively are a must. NPTEL contents can be used as core curriculum content for training purposes.
- A large number of students who are unable to attend scholarly institutions through NPTEL will have access to quality content from them.

All those who are gainfully employed in industries and all other walks of life and who require continuous training and updating their knowledge can benefit from well-developed and peer-reviewed course contents by the IITs and IISc.

NICNET

NICNET(National Informatics Centre Network) is a satellite based national informatics network established in 1987 at Seshagiri. Its aim has been to provide informatics services to State and Central Governments departments and its various organizations. It provides computing and two way data communication infrastructure to aid planning and monitoring of schemes and decision making activities. NICNET consists of three stations:

- (i) Master Earth Station
- (ii) Remote Micro Earth Stations
- (iii) Geo Synchronous Satellite

Master Earth Station is located at CGO Complex, New Delhi. It has 13 meter antenna, network control center and packet switch. Micro Earth station has connectivity with remote to district computers with State computers and also with regional headquarters. NICNET offers specialized computer aided design and computer aided management. It supports X.25 switch with 1200 bps transmission speed and 19.2 KBs receive speed. The present configuration handles 300 packets per second. The host computers are connected with this packet switch. 118 NICNET is currently connected with INTELSAT-V satellite, which functions as relay station between Master Earth Station and Micro Earth Station. Local Area Network with gateway to the NICNET has been developed at the NIC head quarter. NICNET has been extended with more than 500 nodes distributed all over country.

It has following specific features:

- (i) It extends rapid awareness to computerization of different departments.
- (ii) It help in consolidating information for socio-economic developments of district.
- (iii) Each district is connected with State information center.
- (iv) It works as repository of all information systems
- (v) It help in research work.
- (vi) It develop relevant software and hardware tools.

Major Advantages and special features of NICENET

1. **Internet Classroom Assistant (ICA):** It is a sophisticated communication tool that brings powerful World-Wide-Web based conferencing, personal messaging, document sharing, scheduling, linking and sharing of resources to a variety of learning environments.
2. Anyone can set up a class in minutes and allow others to join. After login, users are presented with a 'heads-up' display of class resources.
3. **Conferencing:** Create your own private, threaded conferencing on topics you make for the class or opt to allow students to create their own topics.
4. **Scheduling:** Put the class schedule on-line. With a seven day advance view on your class homepage, students will have a heads-up display of upcoming assignments and class events.
5. **Document sharing:** Students and teachers have the ability to publish their documents on the NICENET website by using certain simple web-based techniques.
6. **Personal Messaging:** Similar to traditional email but fully integrated with document sharing and conferencing, personal messaging is a great way to communicate with and between individuals in your class, comment privately on conferencing postings or give private feedback on papers or documents published.
7. **Link Sharing:** Share links to relevant Internet resources sorted by topics that you create.

REVIEW QUESTIONS

Part A

1. What is Moodle?
2. What is the use of Edmodo?
3. What is INFLIBNET.
4. What is NICNET.
5. Which are the stations exists for NICNET.
6. What is NPTEL?

Part B

1. Explain the features of Learning management system.
2. Explain the features of Moodle.
3. Explain the features of INFLIBNET.
4. Explain the features of NICNET.
5. What are the objectives of NPTEL.

Part C

1. What are the advantages of using Technology in Education.
2. Explain the features of different Learning management systems.