

A REVOLUTION IN EDUCATION THROUGH E-LEARNING

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ABSTRACT

Education has the power to eliminate poverty and other evils that exist in our society. Quality education cannot be achieved through the conventional system of education. Globalization has provided more opportunity in the field of education. The World Wide Web is being used to improve communication, sharing of resources and delivery of education in distance learning mode. E-learning may be taken as the latest form of distance learning mode. The flexibility of learning a topic of interest anytime, anywhere has not only attracted the students, but also many individuals, institutions. Many individuals and organizations are adopting e-learning because of its effectiveness. This paper gives an overview of e-learning in India and its role in the education system.

KEYWORDS: Education, E-Learning, Internet, Online Learning, WWW

INTRODUCTION

Education plays an important role in the development of the nation. Considering the vast geographical area and the huge population of our country it is not easy to provide quality education to all on a massive scale, but the progress of science and technology that too in the field of information and communication technology has brought tremendous change in the education sector. Now education is not confined to the four walls of classroom, but if one is interested it is available everywhere.

As the half-life of information continues to shrink and access to information shows exponential growth, learning refers to more than just the formal offerings that are designed and delivered from a central group. According to futurist Alvin Toffler “The Illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn. Relearn.”

With the advent of the World Wide Web the life of people has drastically improved. In the field of education e-learning plays an important role. The availability of smart and world class technology has influenced the success of e-learning. Education now doesn't mean sitting in a classroom and listening to lectures, instead everything is now available on the Internet. If one misses a lecture or if one does not understand, one need not worry as the videos of those lectures delivered by experts are available online. The only requirement is a good internet connection. The Internet is like a bag full of opportunities one only has to search for what they want. For students in rural areas or for those who have a desire to learn e-learning is the best option. E-learning has made it possible for a person regardless of his/her stream, age to do a course, to learn. Age is no barrier for learning –clearly this holds true in this case. There are number of universities which offer students a diverse range of online courses and the best part is most of it is free unless one wants a certificate. Not only schools, college's even companies today have adopted e-learning. In India where most of the institutes or schools don't have qualified, skilled teachers, e-learning is like a savior as most of the lectures are uploaded by qualified professors. It's

like a classroom sans walls, where everyone is treated the same, where one is not criticized for being a slow learner. Students can learn at their own pace in contrast to the situation in schools where some students find it difficult to cope up with others. E-learning has made learning lot easier and interesting. Now-a-days people do multiple courses which enhance their profile and increase their productivity -all of this has become possible because of e-learning.

THE NEED OF E-LEARNING IN INDIA

India is known for its geographical and cultural diversities. People in rural areas don't get the same educational facilities as the people living in urban areas.

The 2011 census shows that only 74% of the population is literate and again there is a wide difference in the literacy rate of male and female. Table below shows the literacy rate of male and female in rural and urban India.[3]

Table 1: Census of India 2011

Population	Urban	Rural	Total	Literacy
Male	19,54,89,200 (31.4%)	42,76,32,643 (68.6%)	62,31,21,843	82.10%
Female	18,16,16,925 (30.9%)	40,58,30,805 (69.1%)	58,74,47,730	65.50%
Total	37,71,06,125 (31.2%)	83,34,64,448 (68.8%)	1,21,05,69,573	74%

Apart from this there exists a variation in the education system in India, for instance students from IIT (Indian Institute of Technology), IIM (Indian Institute of Management), IISER (Indian Institute of Science Education and Research), NIT's (National Institute of Technology) and other national institutes get quality education and better job opportunities when they graduate but this is not the case of students from other institutes. This disparity in the system can be brought down using e-learning resources. Using these resources students all over the world can avail the world class education and can compete with those who graduate from premier institutions.

There is a digital divide between the urban and rural population. Through education only we can convert this digital divide into digital opportunity.

E-LEARNING

E-Learning is referred to as teaching and learning by using electronic media. Online learning or e-learning is a less traditional but more progressive way to obtain education.

Rosenberg defines the term e-learning as the use of Internet technologies to deliver broad array of solutions that enhance knowledge and performance. The important factor required for e-learning is networking for distribution, storing, retrieval and sharing of information. Thus e-learning may be taken as the latest form of distance learning mediated by state of art technologies like Internet and WWW.

The push to e-learning also comes from economic perspectives. [16]Macdonald (2000) asserts that the deciding factor, setting the pattern for the form of higher education in the future will be cost, and cost effectiveness.

Leaving quality aside, he suggests virtual universities will [17]:“.... provide ‘university education’ at dramatically lower cost than traditional universities – and a cost that will proportionately decrease as the online audience expands... [and] this ... will weaken existing universities’ hold on higher education”(Macdonald,2000:193).[11]

GOVERNMENT INITIATIVES

Education sector has seen a huge transformation over the last two decades. Number of students enrolling for higher education has increased. The delivery of education once characterized by teacher centric traditional class room model has been transformed to anytime, anywhere, self-driven. Only the necessary component is a computer, laptop or an iPad, mobile with a strong Internet connection.

Some of the initiatives taken towards e-learning in India are:

- The Government of India (GoI) actively supports the e-learning drive to overcome challenges and strengthen accessibility. It has launched two schemes - National Mission on Education through Information and Communication Technology (NMEICT) and National Program on Technology Enhanced Learning (NPTEL) - to leverage the potential of ICT in the dissemination of video and web-based course content. The GoI also extensively uses the PPP (public-private partnership) route in collaboration with players such as Educomp and Everonn through the SarvaShikshaAbhiyan and ICT@Schools projects.
- National Programme on Technology Enhanced Learning (NPTEL), a joint initiative of IITs & IISc, provides E-learning through online Web and Video courses in Engineering, Science and humanities streams. The mission of NPTEL is to enhance the quality of engineering education in the country by providing free online courseware. One can access these resources through DVD's, direct downloading, or through hard disks.
- The Spoken Tutorial project is the initiative of the 'Talk to a Teacher' activity of the National Mission on Education through Information and Communication Technology (ICT). [6] Accessible at: <http://www.spoken-tutorial.org/>.
- In India, The Indira Gandhi National Open University (IGNOU), the National Resource Centre for Open and Distance Learning, with international recognition and presence, provides education to all. It provides education facilities to the rural masses thus trying to bridge the gap between the rural and urban populations.
- Among universities in India, IIT, IISC, BIT, Amity University, Manipal Institute of Technology and Symbiosis were the trendsetters in this field.
- The Department of Electronics and Information Technology (DeitY) has been actively developing tools and technologies to promote e-learning. DeitY has supported e-learning focused R&D projects at various academic Institutes. These include content development, R&D technology initiatives, HRD projects and faculty training initiatives to improve literacy through distance education.
- Virtual Labs provide remote-access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate and post-graduate level as well as to research scholars.[6] Accessible at: <http://www.vlab.co.in/>.
- A-VIEW developed by Amrita e-Learning Research lab is a multi-modal, multi-media e-learning platform that provides real classroom like experience. Accessible at: <http://aview.amrita.ac.in> .

- E-Yantra is an initiative to incorporate Robotics into engineering education with the objective of engaging students and teachers through exciting hands-on application of math, computer science, and engineering principles. Accessible at:<http://e-yantra.org/>.
- A multidisciplinary center named Quantum-Nano Centre has been set up at Dayalbagh Educational Institute, Agra under MHRD's NMEICT, with partners as IIT Kanpur, IIT Delhi and IIT Madras, besides several international collaborators. Accessible at:<http://www.dei.ac.in/dei/quantumNano/>.
- The UGC-Infonet Digital Library Consortium was formally launched in December, 2003 by Honorable Dr. A P J Abdul Kalam, the Former President of India soon after providing the Internet connectivity to the universities in the year 2003 under the UGC- Infonet programme. Accessible at: <http://www.inflibnet.ac.in/econ/>.
- ISLERS project is aimed to develop an automatic sign language education platform for hearing impaired students of India. This system can help the students in higher studies and vocational programmes. The framework is proposed to be extended to 14 different languages of India with extensive interactive features in the audio-visual mode. [6] Accessible at: <http://www.iitg.ernet.in/isl/index.htm>.
- Project OSCAR (Open Source Courseware Animations Repository) provides a repository of web-based interactive animations and simulations that we refer to as learning objects (LOs). These learning objects span topics in science and engineering at the college level, math and science at the school level. Students and teachers can view, run and download these learning objects. Accessible at: <http://www.iitb.ac.in/en/tender/oscar-2012>. [6]
- Human resource ministry has set up Sakshat a vocational education programme. This programme was formally launched by the President A P J Abdul Kalam on Oct 30, 2006. The portal of this programme is available at: <http://portal.sakshat.gov.in/wps/portal>. It provides broadband connectivity to approximately five lakh college teachers of central and state universities. UGC, AICTE, IGNOU, NCERT, KVS, NVS, CBSE, IITs, and IISc have developed the content links for Sakshat and they will provide a wide range of knowledge resources, educational views, examination alerts, sample papers and other useful links on the web. The portal has five functional modules, e-books, e-journals, digital repository and digital library. Students can even interact with their teachers real time as well as access e-mail, web blogging, web casting, online chat and discussion forum.
- Government of India has formed an alliance with HCL Technologies to launch Sakshat, the world's most inexpensive tablet (priced at around INR 1,500). The effort is part of the NMEICT scheme, which aims to connect 25,000 colleges and 400 universities in the country in an e-learning program through the already existing Sakshat portal [5].

GLOBAL E-LEARNING MARKET

The worldwide e-learning market is showing a significant growth. The worldwide market for Self-Paced E-Learning reached \$35.6 billion in 2011. In 2016, global revenues for Self-paced eLearning reached \$46.6 billion.

Market research analyst Docebo predict that global e-learning market is projected to reach approximate revenue of \$31 billion at the end of 2020. And game based learning market is predicted to reach \$7.3 billion by 2021.

Drivers for e-learning market are:

- Increasing Government initiatives to promote E-Learning.
- The growing adoption of technology.
- The shortage of quality education.
- Convenience and affordability factors.

With more than 370 million internet users and hundreds of local as well as global business tycoons willing to invest in the future of education, online education in India has picked up pace. In fact, the e-learning market in the country is estimated to be worth more than \$3 billion. The strong government initiatives like “Digital India”, education for all has pushed student enrolments in higher education and distance learning.

TOP 10 GROWTH RATES BY COUNTRY

When we analysed the growth rate of self-paced e-learning market, India stood first with 55% growth rate followed by China at 52%, Malaysia at 41%, Romania at 38%, Poland at 28%, Czech Republic at 27%, Brazil at 26%, Indonesia at 25%, and Columbia at 20%, and Ukraine with growth rate of 20%. [8]

ASPECTS OF E-LEARNING

Today’s generation not only needs basic education but it also needs the 21st century skills to compete with the rest of the world. All these skills cannot be provided in a traditional classroom because of many constraints. One can overcome these difficulties using E-learning material.

- Instructors can remain in one place and teach students in other locations across the world by using live broadcasts, you tube videos of their lectures can be made online so that students all over the globe can use these lectures to improve their knowledge. This saves time as well as money. Students also get the opportunity to learn from specialized instructors.
- Through video conferencing students can learn from each other through discussion.
- One can learn anywhere, any time.
- Course contents can be upgraded easily.
- One can do multiple courses at a time.
- One can learn according to one’s pace. The duration of the course depends on the learner’s ability. Students can learn what they want.
- Standardized tests are conducted securely and on time to evaluate the students.

ISSUES IN E-LEARNING

- Learner should have a computer and internet connectivity.
- Due to the vast geographical diversity in India, people in the rural and mountain areas are unable to access the internet. As e-learning tools become more advanced, so does their bandwidth requirement. Depending on which

applications are in use, bandwidth requirements can vary from several hundred kbps all the way to multi-megabit connections.

- It creates a gap between the learner and the teacher. Teacher has been replaced by the medium such as radio, TV and computer.
- Many people may not be well versed in English and technical skills which is very much essential to get a job in the IT sector since in India majority of the population studies in their regional language. So, they are not in a position to utilize the benefits of e-learning, as most of the information is available in English not in the regional language.
- Learner as an individual rather than in a group.[12]
- Techniques to promote and support interaction.
- Many entities such as education providers, content developers, employers, local authorities, government need to contribute to this learning revolution.

CHALLENGES

While e-learning has begun to stand out in the education landscape, certain challenges continue to hamper its full potential. Some of them are:

- Indians are more inclined towards traditional class room based learning and believe in certificates rather than the skill one possesses.
- Low broadband speed poses a major challenge for enrolment in the course. With the vast majority of the Indian population residing in rural areas, accessibility remains a major concern.
- Rural areas don't have all the resources required for e-learning.
- Critical challenges for educators are, how to ensure equal access to this global storehouse of knowledge, and how to equip all citizens with the necessary skills for the new global environment.
- Also, some courses are not free so this facility can't be availed by low income groups.
- There is no one to one interaction between the teacher and the student.
- Most of the people especially in rural areas are not aware of e- learning.

FUTURE OF E-LEARNING

E-learning is not only used by school and college students to get additional knowledge, skills and to prepare for competitive examination but also by corporate and government sector people who use it to upgrade their knowledge.

In addition, gauging the high potential of this space, many private players such as Core projects, Educomp Solutions, Everonn Education and NIIT have established their presence in this segment in recent times. [5]

Many organizations using the public and private partnership model have been set up, with an aim to train millions of people so that they can survive in the globally competent environment with the help of online courses. Many of these

companies develop online course content for schools and colleges, this has given rise to a new kind of business initiative in the knowledge based system.

Soon, online courses will become readily accessible on mobile devices. Not only do mobile devices allow you to learn from anywhere, newer devices are equipped with digital compasses, dual cameras, incredible audio, etc.[14]

Taking a closer look at the current technological trends we can say that gamification, automation and augmented reality can come in the e-learning industry.

Gamification in learning is becoming increasingly popular and it will become an integral part of online training. The key objective behind gamification of education is that it is fun and more appealing to people. [15]

Another concept in the world of e-learning is automation. A variety of tools are integrating codes that automate the process. Using this one can automatically detect learner's preferences in order to customize every aspect of their e-Learning experience. This will change the traditional way of learning as students will get real time experience of the situation.

Wearable tech devices such as Google glass, Apple watch, Microsoft HoloLens, Oculus Rift give learners the opportunity to interact with the subject matter in a more dynamic way. In the near future, learner may have the chance to walk in virtual training environments and immerse themselves in meaningful e-learning games [9].

Information and communication technology has brought tremendous change in the way we deliver the information. Now we can deliver or access digitalized education through contemporary platform in the 3G environment. Education can be accessed through tablets, computers, iPad and of course through mobile phones. These digital devices are slowly entering into the classrooms. The concern here is we have to ensure that students in rural area are not left behind.

CONCLUSION

Education is the key for success. E-learning is one such tool which will help us to achieve it. Information and knowledge are the new forms of wealth and are the driving force for development. This extraordinary expansion of knowledge is brought about by ICT (Information Communication Technology), which makes it possible to generate, store, transmit, retrieve and process information at vastly increased speeds. All this has implications for lifelong learning because educators now recognize that learning does not stop after formal education ends. E-learning has a great potential in India as most of the population can't afford quality education. Through E-learning everyone can get good and quality education. Coupled with government support, Internet connection and good content e-learning will gain popularity amongst the masses. More and more people will look forward to learning. This in turn will increase the literacy rate of India. The rapid growth of technology and the Digital India initiative in the country has added fuel to the fire. As more people get acquainted with technology it becomes easier to spread awareness about e-learning. E-learning can transform the traditional method of learning as it provides best content on each and every topic which can be accessed by all, this enables the learner to achieve his or her full potential. The growing number of public and private sector initiatives, the changing mindsets of people, and the unprecedented rise of technology are reflective of the promising future that e-learning in India holds.

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