

EMERGING TRENDS OF E-LEARNING IN INDIA

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Abstract - In today's Information and Communication Technology era e-learning plays a vital role in development of an individual and thus future of a nation. Conventional learning is teacher centric and it is very tough to teach same subject in the best quality possible everytime. Also in conventional learning it is not possible for a good teacher to teach at multiple locations in a single instant. But e-learning neutralizes this drawback of conventional learning and becomes a very powerful weapon for the intellectual growth of the individual and helps in producing intellectual society. Conventional learning has many other drawbacks apart from repetitiveness like high cost, limited to classroom, fixed time learning, fixed concept learning etc., which can be overcome by latest e-learning trends. India is a first largest democratic country in the entire world and main strength of the country is its people with democracy. In such countries e-learning is a boon and plays a critical role for producing intellectual think tanks that can be used by entire world for uniform development of all countries on earth and can be competitive answer for other nation intellectual societies. In this work more focus has been given on introducing the new methodologies used for e-learning, priorities of each methodology for easy e-learning and upcoming technological trends in the field of e-learning like Mobile learning, Micro learning, Beacon learning, Internet of Things(IoT), Cloud based e-learning, Gamification and many more.

Keywords - Information, Communication, Technology, e-learning, Development, Conventional, Learning, Teacher, Neutralize, Intellectual, Society, Trends, classroom, think tanks, Mobile learning, Micro learning, IoT, Beacon, Cloud, Gamification, Student, Correspondence, Online, Education, Smart Phone.

I. INTRODUCTION

E-learning or Online education helps people get access to a world-class learning experience when traditional higher education may not be possible due to financial, personal or any other constraints. In countries like India there is a huge requirement of e-learning to take its form completely. India is second largest populated country in the world. The strength of any country is its people and India has the population of 134 crores i.e., 1.34 billion. One of the best place in the world to use these latest e-learning trends is country like India. Today India is a home of many latest e-learning trends in education that are being used by the developed countries from a very long period. Some of the emerging trends of learning in India are:

- Distance education - Postal, Radio, TV
- E-Learning
- Open Educational Resources (OER)
- Cloud based E-Learning
- Big Data in E-Learning
- Automated Course Authoring
- Responsive LMS
- Ubiquitous Learning
- Massive Open Online Courses

What is E-Learning?

E-learning is an electronic learning method, it typically means using a computer to deliver a part or the entire course whether it's in a school, part of mandate business training or a full distance learning course. This e-learning can also be widely coined as "online learning" or "virtual learning". E-learning is gift to individual and society where all the learning is

done at learner convenient level using the electronically made devices like computer, mobile phone, tablet, smart phone etc., The Fig 1, explains simple e-learning technique using a computer device. The learner with the use of computer connected with internet can access tremendous level of information which replicates the physical library or physical books. E-Learning provides world class resources of information from which the learners can benefit at their own phase of learning.



Fig.1. Simple E-Learning.

What Learners Want?

- Mobile, relevant, personalized, self-paced
- content coverage at point of need.
- Many prefer learning at convenient timings like weekends or on their daily commute to and from work.
- Today mobiles changed how we come across, view, ideate, propagate and share content.

Among all the learning trends e-learning is very powerful tool to provide the learner with all the things he is willing to learn at his own or self-pace. In

this period of modern era, learning is very important but at the same time learner interest also has to be kept in much consideration. E-learning provides the learner with most of the things he desires to quip himself. It doesn't restrict the learner with anything unless and until proper resource is available at learner and at the same time availability of the information created by the someone who has already understood the requirement and purpose of learner's interest. Some electronic devices used for e-learning are computer, Television(TV), mobile phone, smart phone, tablet, personal digital assistant(pda) etc., The Fig 2 shows the devices the learner is surrounded by to quip himself through e-learning in this 21st century. Comparatively this generation learners have more opportunities to gain knowledge than learners of older generations.

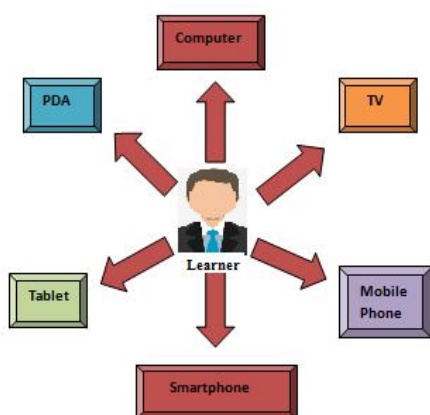


Fig.2. Various devices used for e-learning in 21st century.

If we discuss about the education in 21st century, the actions of people speaks a lot how the learning is changing in current days. The traditional learning was teacher-student and book-learner but today the learning is completely based on resources availability on WWW(World Wide Web). If we take the note of these e-learning contents that the way they are getting updated every moment it's really a boon to e-learning. People are creating nearly 2000 websites every hour, uploading 30 to 40 hours videos every minute, watching 2 to 2.5 billion youtube videos every day, so many social networking scraps. These all creates a very huge way for e-learning. Some important advantages of e-learning are:

1. Does not take as long to start and wrap up a learning session.
2. Learn at their own pace and place.
3. No commute time is required.
4. Learners can focus on concepts they want.
5. Reduced cost for learning and development.

II. LITERATURE SURVEY

In the recent decades e-learning was really taking its shape and now it is of tremendous size that everyone

is feeling its impact. This learning technique is completely changing the traditional format of the traditional learning patterns. In this same area of e-learning there are so many articles written among which some are read and referred in the reference section. Some of the top most journal has published papers in the same area of e-learning and these interesting journals are.[1] Valentina Arkorful and Nelly Abaido, written paper "The role of e-learning, the advantages and disadvantages of its adoption in Higer Education", tells effectiveness of using e-learning in teaching in tertiary institutions. Its points various advantages or benefits of E-learning. The author also says along with some good advantages there are few disadvantages too in e-learning. Author gives a good model for using e-learning in education. The model classifies the online learning into individual and collaborative learning, in which the author again says collaborative learning can be of synchronous and asynchronous. [2] Jui-FengWeng, Shian-Shyong Tseng and Tsung-Ju Lee written paper "Teaching Boolean Logic through Game Rule Tuning", were e-learning is shown as a game with the usage of boolean logics. In this paper author has told how interesting will it be to learn the same boolean logic with the usage of computer simulations. Here the author also specify that even the most difficult things becomes more easy to learn and remember for very long time as simulated games on computers through e-learning. [3]AbdallahTubaishat, AzzedineLansari, "Are Students Ready to Adopt E-Learning? A Preliminary E-readiness Study of a University in the Gulf Region", this paper speaks about readiness of students, colleges or universities for accepting of the e-learning environment. This paper is restricted to e-learning perception of gulf region and it finally concludes that students have very high acceptance to e-learning in their regional institutions. [4] Maria-Blanca Ibanez, Angela Di-Serio, and Carlos Delgado-Kloos, "Gamification for Engaging Computer Science Students in Learning Activities: A Case Study", this IEEE published paper speaks how gamification technology engages the students in learning activities. Here the author engaged the students for learning the C-Pragramming language basics through gaming platform. Finally it is concluded in this paper that the gamification plays very effective role in engaging the students in learning activities and also has positive effect on knowledge acquisition. At the same time author suggests that same gamification technology can be used for similar other programming learning for the students. [5] G. Pankaj Jain, Varadraj P. Gurupur, Jennifer L. Schroeder, and Eileen D. Faulkenberry, "Artificial Intelligence-Based Student Learning Evaluation: A Concept Map-Based Approach for Analyzing a Student's Understanding of a Topic", this reputed paper tells about the artificial intelligence technological trend in student learning. In this publication the author uses a tool named artificial

intelligence-based student learning evaluation tool (AISLE). The main purpose of this tool is to improve the use of artificial intelligence techniques in evaluating a student's understanding of a particular topic. The author uses artificial intelligence as a medium of e-learning tool and at the same time he evaluates the understanding capability of a student. In conclusion the author says this method reduces the time involved in assessing a student understanding of a particular topic and at the same time the instructor can compare variability of understanding between various students. Webopedia and Wikipedia has helped a lot in getting the information on various technological trends and their current usage as e-learning. [8] Webopedia provided some good meaning for IoT and its future extension.

III. DIFFERENT TECHNOLOGICAL TRENDS OF E-LEARNING

The technological trends of e-learning today are enormous and growing with very rapid pace. In this competitive world everyday some new trend is emerging to provide good learning techniques to the learner, among the popular technological e-learning trends these are some listed:

1. Mobile Learning:

Mobile learning is the ability of an individual to obtain or provide educational content on personal pocket devices such as PDAs, Smartphone's and mobile phones. These devices with access to internet connection or with the availability of the resources on itself will be a great source of e-learning. Today everyone has smart mobile phones on which huge memory and faster internet availability can be achieved and this makes the user to learn anything he desire at anytime and in any place. These devices are so portable that as if they walk with the user and never be a hurdle to carry them from one place to another. Mobile learning apps are also great source of this kind of learning. Mobile learning has a great role to accomplish the success of e-learning in a country not only like India but also in many developing countries of the world. Mobile phones are considered to be best platform for e-learning because:

- Potential to reach masses.
- Carried all the time.
- Easy to use.
- Cheap.
- Just in time learning.

2. Micro Learning:

Micro learning is a way of teaching and delivering content to learners in small, very specific bursts. The learners are in control of what they are learning and when they are learning. Typically designed and delivered in rich media formats, it is a learner-centric approach that provides just-in-time training that is available on multiple devices. All these aspects

ensure that it can be easily accessed, quickly completed, and easily applied by the learners. The main benefits of this kind of learning are:

- Accessible.
- Rich media.
- Less time consuming.
- Just-in-time
- Learner-centric
- Less time consuming.

Micro Learning also provides huge benefits to business environments like:

- Affordable and agile.
- Shorter development cycle.
- Easy to update.
- Wider application.
- High impact.

3. Internet of Things (IoT):

It refers to the ever growing network of physical things or objects around us which hold IP address for internet connectivity, and the communication that occurs between these connected objects and other internet enabled devices and systems. It include not only the traditional things like desktop, laptops, smartphones, tablets etc., but also all other things that utilize embedded technology to communicate and interact with the external environment via the internet. Here IoT can be a great tool for the learners instant learning for like daily study exercises, daily news or any information study the learner instantly plan to learn. In this kind of technology the learner will be assumed like an object in the whole system, where the system connected will detect the new updated and specific learner IP and gives him all the updates he desires from the whole network of physical devices or objects in which he is connected. Some major benefits of IoT in case of e-learning can be listed as follows:

- Learner is part of the learning system as an entity.
- Continuous tracking of learner by the system.
- Continuous updates to learners.

4. Cloud based E-Learning:

This type of e-learning is creating ripples in the field of education and business. These e-learning systems are hosted on the internet and can be easily accessed by logging into a service provider's site. Rather than installing all the software and course on user's or learner's computer, the instructional designers will simply use their internet browsers to upload course content, create new courses, and communicate with learners and users directly. This is all done by learner management system, which also gives the designer the ability to store information on the cloud, which can be remotely accessed by other, approved users. here are some notable advantages of using this type of e-learning methodology. They are:

- Faster deployment.
- Cost predictability.
- Easier to maintain.
- More storage space.
- Fully customizable and scalable.
- Learner oriented service request.

5. Gamification:

In e-learning, gamification is the hot topic today with lots of good reasons. It has proven to be useful in helping learners further comprehend and apply new information they want. This type of e-learning is through games and it really depends on the program and the audience desires. Especially children can benefit more from this kind of e-learning because it create interest in them and make them do again and again for long time. Gamification not only helps online learners acquire knowledge and skills more effectively but also it allows them to retain the information and commit it to long term memory for the future use. Some of the important benefits of the Gamification in e-learning are:

- Better learning experience.
- Better learning environment.
- Takes to Mastery level.
- Instant feedback.
- Helps to remember for long time.

6. Adaptive E-Learning:

Adaptive e-learning uses computers as an interactive teaching devices. These methodology arrange the allocation of human and mediated resources according to the unique learning needs of each learner. This is also known as intelligent tutoring and it has its origin from artificial intelligence and started gaining its popularity in recent decades. Adaptive learning system can be implemented on the internet for use in distance learning and group collaboration. The field of distance learning is greatly incorporating the aspects of adaptive learning. Adaptive learning has been implemented in several kinds of educational systems such as adaptive hypermedia, intelligent tutoring systems, computerized adaptive testing, and computer-based pedagogical agents.

Some major benefits of this technological trend in case of e-learning can be:

- Very rich study resources.
- Tracking of learner by Tutor or human allocated.
- Saves lots of time of learners.

7. Augmented Reality:

This technology superimposes a computer-generated image on a user view of real world. It is related to a more general concept called mediated reality. It is really a great boon technology for the students or learners in general. Whenever the learner wants to know more of the things he is seeing in the real world, using a device like mobile phone on which the augmented reality software is enabled, the learner can get all the information regarding the object. This

technology needs device, internet and software of augmented reality. This technology has good future in e-learning. This technology has long way to go for making the learners learn the things just by projecting the device. This technology has just introduced in 1962. Google glass is a very good example for augmented reality.

Some benefits of augmented reality in case of e-learning can be as follows:

- Easy instant deep learning of things.
- Huge collection of information.

8. Video E-Learning:

This kind of learning helps the learner to grasp the content by watching the videos. When a learner wants to get an idea on some specific topic in details he visits the youtube.com for sure. This kind of e-learning gives a very quick idea and helps to understand the things with multimedia affects. Youtube.com is a rich source of video e-learning content and in the same way TV, CD's and storage devices with educational videos paves the way to this kind of e-learning and these days this kind of learning is on full swing as it saves lots of time of the learner compared to reading line by line full stuff on computer or any other electronic device and also it might take little concentration of the learner than to reading stuff. This serves as very effective medium of e-learning. Some benefits of video e-learning can be as follows:

- Video explanation.
- More information in less time.
- Best learning experience.

9. Beacon E-Learning:

This is one more boon technological trend to the e-learning. This beacon e-learning or beacon technology is a wireless devices that transmit signals to other nearby devices via low-energy Bluetooth connections. This is used as an Indoor Positioning System (IPS). These IPS beacons can wirelessly locate people and objects within a specific range and then trigger an action on a nearby wireless device. Most importantly this is safe and secure, only accessible through paired applications and easy to download and use. In these modern times almost 99% college students have smartphone and they can use their phones for effective e-learning. Some great benefits of this technological trend is:

- Easier Campus Navigation.
- Better Accessibility.
- More Powerful Communication.
- Increased Intellectual Discovery.
- Insightful Data.
- Improved In-Class Experiences.

10. Artificial Intelligence:

This technological trend can also be a great shaper to e-learning world. Artificial Intelligence and robots are not same things. It is something like intelligent

software which is designed to take some intelligent actions reading entire environment around it. This can produce a very good instructor which helps in making each and every student a good expert in their own field. Some latest outcome in artificial intelligence learning instructors are like SIRI and VIV, these are software which will answer simple queries to much complex queries of the learners. The involvement of artificial intelligence in e-learning helps the learner to take very wise decisions and quality resource, which in turn helps the learner to excel and make his achievements at faster phase.

Some major benefits of AI in case of e-learning can be as follows:

- Provides expert tutors for learners.
- Automated teaching.
- Huge and rich information.

IV. ANALYSIS OF TECHNOLOGICAL TRENDS OF E-LEARNING

Long ago, few decades in time there was a time when learning works and education was on hard papers or hard copies but slowly computer was introduced, which was a revolutionary electronic device then the soft papers or soft copies came in to the field of learning and when internet was launched, distance courses were being offered to provide students with education on particular subjects or skills. [6] There was time since 1840's, first Isaac Pitman taught his pupils shorthand via correspondence. Shorthand is a symbolic writing was designed to improve writing speed and was popular amongst secretaries, and other individuals who did a great deal of note taking or writing. In 1924, the first testing machine was invented. This device allowed students to test themselves. Then, in 1954, BF Skinner, a Harvard Professor, invented the "teaching machine", which enabled schools to administer programmed instruction to their students. It wasn't until 1960 however that the first computer based training program was introduced to the world. This computer based training program (or CBT program) was known as PLATO-Programmed Logic for Automated Teaching Operations. It was originally designed for students attending the University of Illinois, but ended up being used in schools throughout the area. Because of evolution of computer and internet in the late 20th century, e-learning tools and delivery methods also got expanded. The first MAC in the year 1980's enabled individuals to have computers in their homes, making it easier for them to learn about particular subjects and develop certain skill sets. Then, in the following decade, virtual learning environments began to truly thrive, with people gaining access to a wealth of online information and e-learning opportunities. Presently in 2000's, businesses began using e-learning to train their employees. New and experienced workers alike now had the opportunity to improve upon their industry

knowledge base and expand their skill sets. At home individuals were granted access to programs that offered them the ability to earn online degrees and enrich their lives through expanded knowledge. Today, e-learning is more popular than ever, with countless individuals realizing the benefits that online learning can offer.



Fig.3. Power of E-Learning.

The above Fig clearly demonstrates the power of e-learning today in this 21st century. There was a time where one has to go only for the colleges to acquire degrees but e-learning has changed everything today by providing online degrees based on the learner skills and his understanding.

A very vast collection of devices are used for e-learning, depending on the accessibility to common person and usage of these devices in e-learning can be predicted as shown in the following pyramid figure.

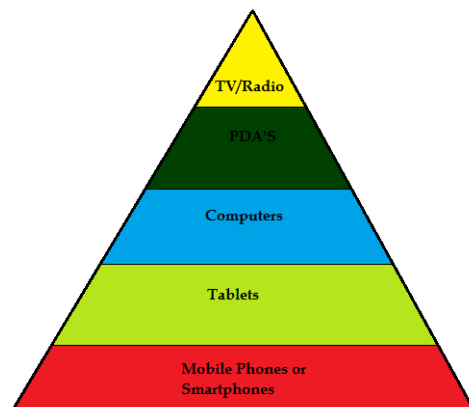


Fig.4. Pyramid of E-Devices used for e-learning.

Top 10 Growth Rates By Country:

Growth rate shows how each country adopts eLearning and is a significant indicator since it can reveal revenue opportunities. The growth rate of self-paced e-learning by different country is [7]:

1. India: 55%
2. China: 52%
3. Malaysia: 41%
4. Romania: 38%
5. Poland: 28%

6. Czech Republic: 27%
7. Brazil: 26%
8. Indonesia: 25%
9. Colombia: 20%
10. Ukraine: 20%

By the above growth rate one can understand how the different countries are adapting to e-learning culture in entire world.

CONCLUSIONS

From this paper of Emerging trends of e-learning few major conclusions that can be made are as follows:

1. E-learning is a boon to the society and it can reach to any part of the world and maximum benefits can be obtained from it by anyone and at anytime.
2. In coming future e-learning will save lots of time and money of the learners or users.
3. E-Learning portal and websites should be owned by the governments of the particular countries for easy and free access of these learning resources by the people who are desiring to learn and equip themselves
4. E-learning is also a boon to the academic teachers where they can save lots of time and stressful condition of repetitive classes and focus much on student equipment in their respective subject.
5. E-Learning is best tool for learner to learn according to their own phase and whole future of education will turn its way on it.

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