

E-learning as a Research Area: Its Applications

Hasina Masud Khadas

Student, MSc(IT), D.B.J College, Chiplun, Ratnagiri

ABSTRACT - The concept of E-learning is very broad. In the earlier 90's it was stated as technology-enhanced learning mechanism through the internet. In the area of globalization, knowledge is important and must for any organization, educational institutes, company, etc. E-Learning is defined as internet-enabled learning. The invention of the internet and the world wide web(WWW) has made the internet the world of a global village. A tremendous wealth of knowledge is provided on the internet and it can be accessed globally. Anyone can have access to E-learning and its applications from anywhere in the world with internet connectivity. In earlier days, it was very difficult to spread knowledge globally, but today it is very easy to learn and share with the use of the internet. Life has become easier with the growth of the internet. In educational platforms, students and teachers have gained tremendous benefits with E-learning. With new technological inventions in various fields day by day, E-learning captures a broad range of electronic media to make the learning procedure more flexible and user-friendly. Because of its flexibility, its demand is increasing in our country day by day.

As the demand is increasing, there is a need to standardize the E-learning system and to improve the quality of the existing system with new technologies. Though many organizations and academic institutes have already accepted many standards, still there are some pros and cons of these standards that need to be resolved by introducing new technological standards in the existing standards to make them more practicable and more systematic.

This paper focuses on current E-learning procedures and how new dimensions of research work are added to the existing research for the ease that follows the important and most neglected research areas until today in this domain. It also focuses on the importance of the e-education system and the recent market of e-learning procedures.

Keywords: E-learning; learning standards; technology-enhanced learning procedure; e-education system; dimension of research areas.

1. OBJECTIVE

The objective of this research paper is to give a detail insight about what is e-learning and what are the differences between the traditional learning methods and e-learning methods and how can the new upcoming technologies with e-learning benefit the end users.

2. INTRODUCTION

We are living in an era where the world is connected globally. Almost everyone is using WWW (world wide web) for collecting information. E-learning is useful to remove the barrier of age, place, time and socio-economic nature. With E-learning, the students and the instructors can be separated by time, distance or both and still can be connected. Various electronic media can support e-learning. With the revolution in technology, the educational world has been changed tremendously. In the field of education, with the internet, the web is used as a communication channel to connect distant learners. E-learning is used to enhance traditional learning methods. Eg. Students watching the video in schools and colleges on the projector, students sitting at home and doing their studies with various e-learning applications. With E-learning, you can learn anywhere and at any time through the use of a computer. "E-learning is about communication, information, education, and learning", It uses information technology and communication for learning. It involves the use of CD-ROMs, the internet and other means to facilitate learning. E-learning has no restrictions and no boundaries. Learning through E-learning is fun with the use of multimedia or methods of gamification. E-learning is cost-effective.

As there is an enhancement in technology, the demand for e-learning is increasing. The technologies, tools, techniques, methodologies, and standards are advancing in such a way that it has to overwhelm the ability of educationists to isolate, study and report on the best methods to be used for any given audience [2].

Though E-learning has eased the process of learning, there are still numerous problems faced by institutions and organizations with the current standards. In our country, we still have to carry handheld devices. Many researchers are still

trying to make the representation of the content standards. They are trying to make the learning application and style more appropriate and powerful from the learner's point of view.

Through this paper, the author is trying to explain the type of research work involved in an E-learning environment that people are working on. The author is mostly focusing on the education system only which is a more promising area than all the others involved in e-learning. The paper starts with a discussion of the relationship between e-learning and education systems. It is followed by the recent market and its growth in developing countries.

3. THE EDUCATION SYSTEM AND E-LEARNING

The internet is used to make online education more attractive. Internet with its standard protocols and services is creating new dimensions in the education system. E-learning empowers learners to get the knowledge they want, to complete their schooling or getting a course certificate without actually attending college or any other institute. In schooling, it helps the students to grasp all the lessons properly. It keeps students engaged in class and creates a disciplined environment for them. The benefit of learning online is that you are updated with the recent advancement in technologies and there is synchronization with the learners. E-learning can suit all the learning methods. Various types of e-learning are mixed learning, self-study, completely online, synchronous, Asynchronous, web-based learning, etc. It is cost-effective, flexible.

In India, e-learning is getting spread at a tremendous rate. Here is a story to tell you about how e-learning is changing the lives of Indian youths: the story is of Akhil Yada, who pursued B. Tech in ECE. Akhil got a campus placement in a business analytics profile instead of VLSI, a domain in which he wanted to make his career. Following a friend's advice, he applied to an internship at DRDO but couldn't land one due to a lack of relevant skills. Soon he enrolled in a six-week online training in VLSI and mastered the basics. As a part of this training, he designed an adaptive filter using VHDL, and the knowledge he had gained during this stint helped him land a two-month internship with the research center Imarat DRDO [1].

The United States Distance Learning Association says, "Distance learning encompasses all technologies and supports to the pursuit of lifelong learning for all" [7]. **eLearnSpace** is a weblog and newsletter developed by Canadian educator George Siemens that covers development in e-learning technology and deployment. **Training watch** is an e-learning database where numerous people contribute to the corporate e-learning community. Visitors are given e-learning news and analysis on the front page of this site. Readers can provide feedback and ratings. "E-Learning Centre Resource Guide" is the UK's best online source for e-learning. There are different e-learning platforms like William Horton consulting inc. that helps schools, colleges, and other institutes to implement effective e-learning programs. Jay Cross maintains daily weblogs to share recent findings.

It is time now to standardized the whole e-learning system. This can be done through advanced distributed learning(ADL), Instructional Management System(IMS), IEEE Learning Technology Standards Committee. Apart from these, organizations such as the alliance of remote instructional authoring and distribution networks for Europe and Aviation industry CBT(AICC) is also working on improving the e-learning standards.

4. MARKET OF E-LEARNING

We can divide the online learning education industry into three major market segments:

- Content organizations: firms that provide course structure, stimulation, testing assessment.
- Learning services firms: they provide program building components, development and programming, maintenance and online monitoring
- Delivery solution companies: they sell technologies associated with e-learning.

E-learning requires a combination of tools, technologies, and processes. E-learning market in the US is expected to increase USD 6.22 billion between 2017-2022, accelerating a CAGR of over 5%. The European e-learning market is expected to increase USD 36 billion in the market over the next five years, accelerating at a CAGR of 15% by 2023. The market of e-learning in GCC will grow at a CAGR of 14% during 2018-2022, increasing more than USD 13 billion [3].

Industry trends: E-Learning market size will grow at a CAGR of 7% from 2019-2025 which was around USD 190 billion in 2018.

AR and VR devices, AI platforms, big data, and machine learning are allowing several business organizations to share and deliver educational knowledge in innovative and interactive methods. Cloud computing has now replaced the conventional

systems. Cloud-based e-learning provides lower operational costs, by eliminating the need to install the software required for the applications.



[3]

E-Learning Market Report Coverage			
Report Coverage	Details		
Base Year:	2018	Market Size in 2018 :	190 Billion (USD)
Historical Data for:	2014 to 2018	Forecast Period:	2019 to 2025
Forecast Period 2019 to 2025 CAGR:	7%	2025 Value Projection:	300 Billion (USD)
Pages:	200	Tables, Charts & Figures:	336
Geographies covered (21):	U.S., Canada, UK, Germany, France, Italy, Spain, Russia, China, India, Japan, South Korea, Singapore, Australia, Brazil, Mexico, Argentina, Chile, Colombia, GCC, South Africa		
Segments covered:	Technology, Provider, Application and Region		
Companies covered (20):	Adobe Systems Inc., Allen Interactions Inc., Apollo Education Group, Aptara, Inc., Articulate, CERTPOINT Systems Inc., Cisco Systems, Inc., Citrix Education, City & Guilds Group, Cornerstone, D2L Corporation, Intuition Publishing, Kallidus Ltd, Learning Pool, Meridian Knowledge Solutions, Microsoft Corporation, Oracle Corporation, Saba Software, SAP SE, Skillsoft		
Growth Drivers:	North America & Europe Increasing demand from healthcare sector Rise in content digitization LMS switching to cloud-based systems Asia Pacific & Latin America Growth in higher education sectors Corporates upgrading their training programs Growing demand for online English courses Middle East & Africa (MEA) Rise in government programs and initiatives Rising penetration of internet and mobile learning		
Pitfalls & Challenges:	Lack of peer to peer interaction Slow internet connection and poor network Adaptability Issues		

[3]

E-Learning Market, By Technology

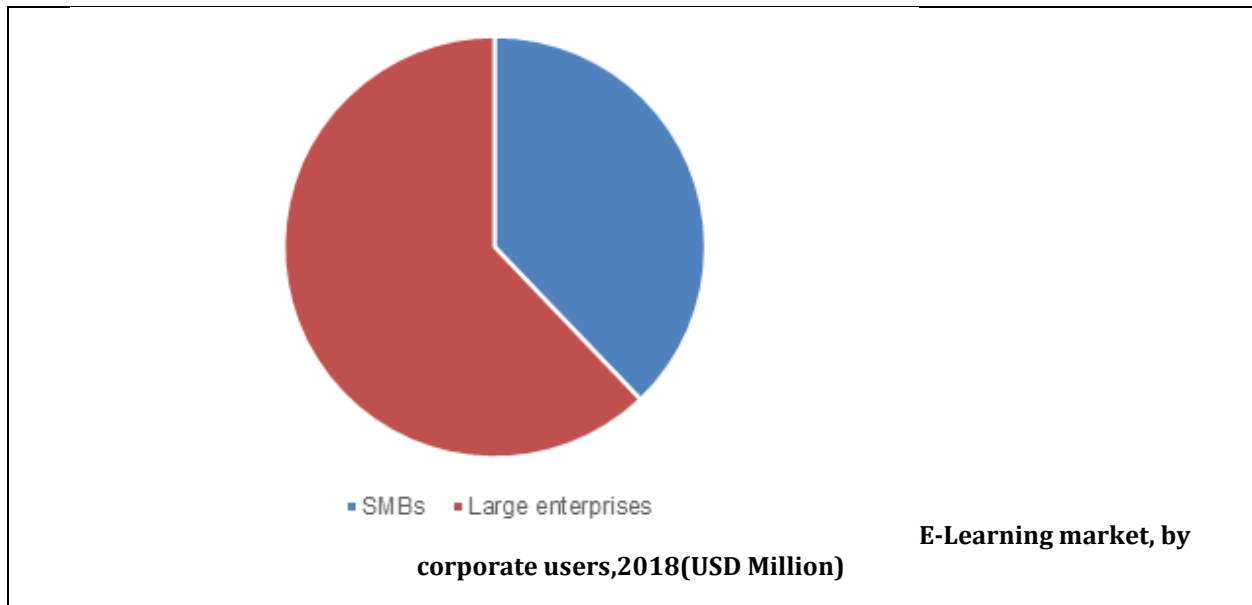
In 2018, academic and corporate sectors are using a learning management system(LMS) technology to reduce the training expenses and offer learning and training modules to employees or students. LMS is also used by companies as performance management systems.

E-Learning Market, By Provider

The content providers provide the course materials to educate or train students or employees. These providers are services from companies that offer LMS solutions. Software companies include these provider contents into their training modules to the users. In 2018, UpsideLMS partnered with BizLibrary.

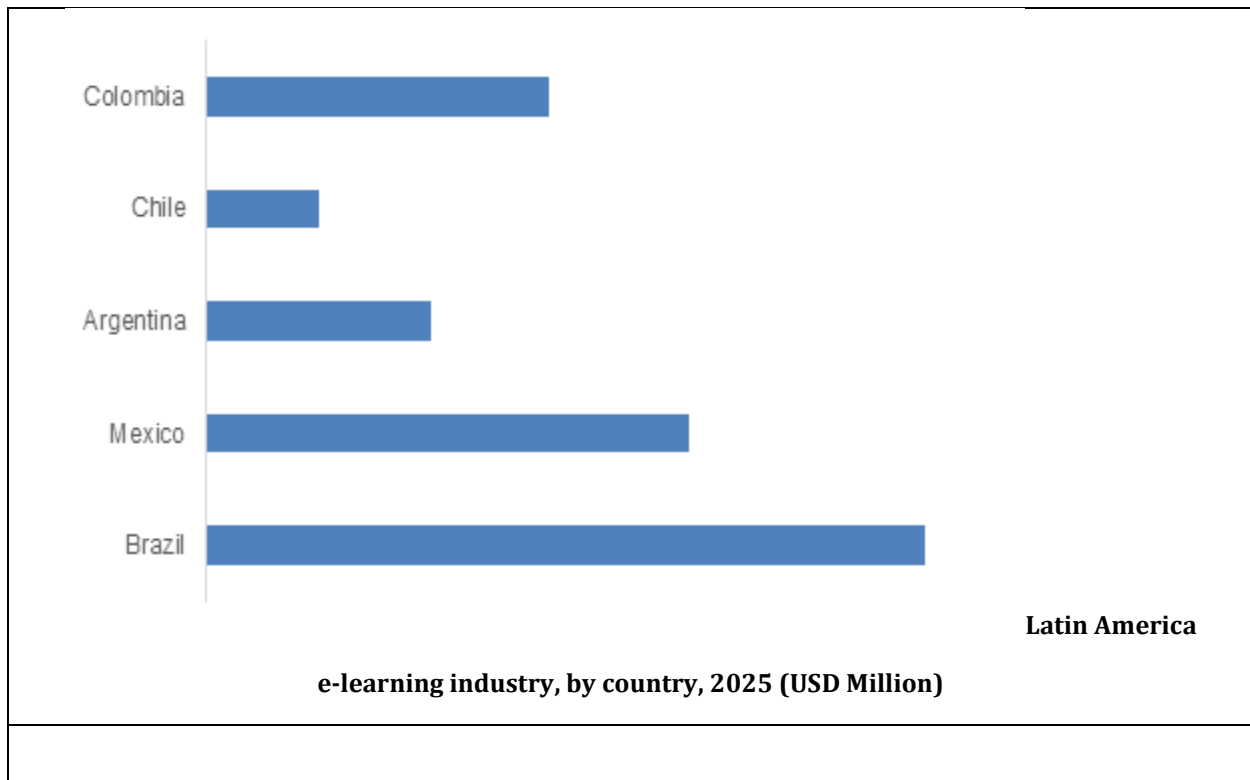
E-Learning Market, By Application

The corporate sector is adopting this technology at a higher rate than previous since there is an increased demand for effective training courses for the employees. The CAGR growth rate is around 8% from 2019 to 2025. The corporate industries are using modern learning technologies with the use of interactive media to give knowledge to their employees about organization policies and standards and their job roles. They include workshops and conferences. New or promoted employees are trained through video or software-based training programs. It is very difficult for any organization to have different trainers each time a new employee is hired. Because of these problems, these sections are implementing an advanced e-learning knowledge base for their staff.

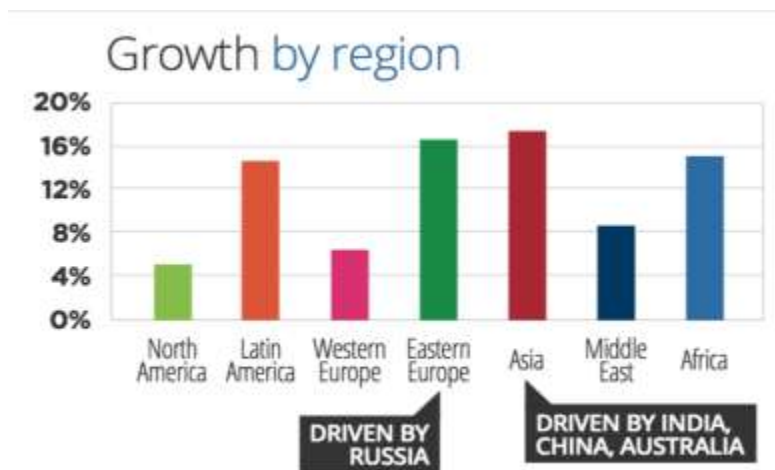


[3]

E-Learning market, by region



[3]



5. PROSPECTUS OF E-LEARNING

The content management and web security are the current promising areas of e-learning. Content management system(CMS) is software that allows anyone to upload and share digital media. Learning Management System is a type of Content Management System. Your e-learning material should be secure. E-learning courses should stop unauthorized access from the users who are not authorized with that course. It should also stop sharing and distribution. The quality of learning content should be improved. In sectors like real-time, in collaboration, delivery of a speech, dynamism and global reach, e-learning has lots of prospectuses. This is because in these sectors:

- Learners can have access to the updated information through the internet without having to install the software.
- Learners can access information through databases, or university or company intranets.

- Learners can interact with other members and experts in a virtual space to discuss various issues, answer various questions and even participate in various events without having to leave their office and home.
- Learners can learn whenever they require and whenever there is a need.
- Learners can have access to the right set of training at the right time with the right people
- Different types of learners can have access to the same materials.

6. RESEARCH IN E-LEARNING

E-learning has changed the whole world of education. Various fields such as information and technology, education, distance education, and mass communication are undergoing research in e-learning. Some major aspects of e-learning that are covered under research activities are:

1. Learning behavior: It has a role in deciding how e-learning tools and support are used for a particular program. A traditional face-to-face or a distance learning program may have good e-learning support, but learners are unable to use it properly. Gender, age, and subject affect e-learning behavior.
2. Learners access: e-learning requires a computer and network connectivity. There are two types of obstacles between learners and e learning tools on which the researchers are focusing: i) technology and infrastructure related limitations: Lack of internet connectivity. ii) Psychological limitation
3. Learners and Teacher's perspective: many organizations and institutions provide e-learning for their programs through blended learning and complete online mode. In blended learning, e-learning is provided as an extra facility to enhance the quality of learning. E-learning is mandatory in complete online mode.
4. E-learning platform and tools should be user-friendly: tools should be simple and user-friendly. It should be designed for ease from the learner's perspective.
5. E-learning impact for memorizing and understanding the content by the students: Multimedia study materials with 3D-2D animations are comparatively more interesting than normal study material.
6. Social networking websites as tools of e-learning: these sites can be used as e-learning tools. Eg. Facebook

There are 4 compatibility standards in e-learning

- 1) Installation and initial launch: it establishes a relationship between the learner and the courseware. Earlier it was difficult to install a course with this standard, but now it is easy with LMS.
- 2) SCORM Compliance: SCORM (Sharable Content Object Reference Model) implements portability and interoperability in an e-learning course. SCORM keeps a complete record of employee's course progress, time spent by learners on each screen. Learning professionals get a lot of valuable data from SCORM.
- 3) AICC Compliance: Aviation Industry Computer-Based Training Committee helps define the interaction of the Learning Management System and e-learning courses
- 4) Tin Can API: it tracks learning experiences through anywhere and from any device.

7. CONCLUSION AND FUTURE PROSPECTUS

The main aim of e-learning is to create a user-friendly atmosphere for the learners with proper security mechanisms and for this researchers are trying to improve their tools and technologies each day. There are many challenges faced by the researchers now and then. The encryption of messages and the security of services in e-learning systems are needed to be considered. Peoples with the following features have a great future scope with e-learning: economic, dream institutions, subjects, and assistance, time management. E-learning provides scope for improving one's communication skills. E-learning helps people to sit at home and gain access to knowledge. There is no need for a person to be physically present in the location.

8. REFERENCES

- [1] <https://yourstory.com/2018/07/e-learning-indian-education>
- [2] "The E-learning e-revolution in colleges and universities". A Pan-Canadian Challenge, 2001.
- [3] <https://www.gminsights.com/industry-analysis/elearning-market-siz>
- [4] https://www.researchgate.net/publication/306092115_Research_Trends_in_E-Learning
- [5] <https://elearningsindustry.com/implementing-five-moments-of-need-model>
- [6] <http://www.worldwidelearn.com/elearning-industry/articles.htm>
- [7] P. Gledhill, "Latest e-Learning research in Europe Middle East and Africa" (page 1 of 3), 2004.