

The Scope of e-Learning – A Research



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ABSTRACT---The need of education is the lead to economic growth. Earlier days many of the perseverance learners looked for the means to learn new things, but only some are succeeded as they put much effort in all means. The scenario now-a-days is entirely different as new technologies and new inventions are twinned a way for better education through digitalisation. This digitalisation paved a way for development of the academic content by e- resources. Many organisations are competing one another to produce the user friendly, widely available e- content either commercially or freely. The proposed paper covers various e- resources and learning sites through tabular form, which carries the number of courses and users enrolled, free or paid etc. It also depicts the different e-learning components visually by pie-charts.

I. INTRODUCTION

The process of studying through electronic devices is called e-learning or electronic learning. This e-learning is also said to be online education. Computers and internet connections are the major components of e-learning. In this digital era where the technology develops rapidly, the usage rate of online education is also pretty high. Now-a-days most of the people across the globe are very familiar with the usage of smart phones, tablets, laptops. These electronic inventions made them get connected to various social networking platforms. Social media is one of the finest way of communication that enables us to share knowledge, information, latest news across the world. Online education also offers the capacity to save and share materials, e-notes in all types of formats consisting of films, slideshows, phrase files, and pdfs. Undertaking seminars (live sessions) and peaking with professors via chat and message forums is another feature provided to users.

Benefits of e-learning

There are many benefits of adopting to words e-learning as shown in figure 1. Some of them are listed below:

1. It is fee-effective and saves time:

By the way of lowering the time consumed far from the workplace, disposing of tour prices and putting off printed materials, on-line studying lets you save money and acts as a booming place for business productivity. E-learning support group are available 24/7, so we can study anywhere, anytime.

2. Easily managed:

e-learning courses can also be managed in our busy running schedule. The maximum of e-learning guides have a certain duration time, and it also permits learners to print out the certificate of fulfilment as an extra incentive.

3. Online classroom environment:

It is discreet that not all of us feel relaxed studying in a huge organisation, but e-studying allows anybody to address the subject according to the people's personal tempo, with interactive tasks ensuring an intensive knowledge during every module.

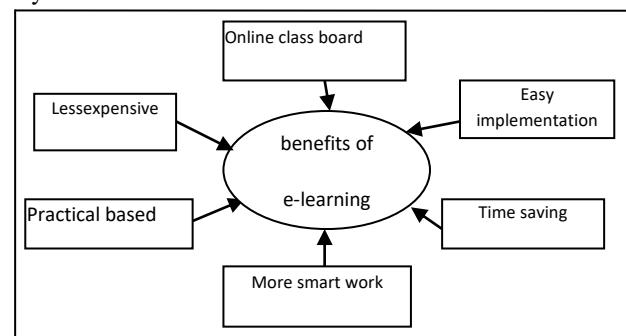


Fig 1. Various benefits of e-learning

Revised Manuscript Received on December 30, 2019.

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II. LITERATURE REVIEW

Among the various papers gone through, most of them are keenly concentrated on effectiveness and the impact that the e-learning sources are creating in the minds of the present generation. While some papers even discussed on additional factors like what exactly is crushing the interest of people to study something digitally.

According to [Mudassir Khan](#) [[HYPERLINK \l "KHA16" 1 \]](#), E-learning technologies seek to enhance the educational results target by using e-learning technology instruments in a thorough manner and to empower innovative learning. e-learning is an effective part of student's technical, design and developing skills in the current era in computer science.

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In the view of *Froilan and Gesswein* [HYPERLINK \l "Mob19" 2], the e-learning system is designed to help students gain an understanding of their respected academic subjects and to enhance and engage their learning experience. Through the research they did regarding the scope of e-learning, they suggest that it would be better if the learning system as such, blooms wide across the world which can be happen only when every individual knows the procedure of accessing the sources provided.

As per *Roohinder Kaur* [3], today, with various technological developments, learning is not limited to lecture classrooms as the only way to transfer knowledge, but rather an electronic way of learning has continued to develop. Electronic education, enabling training through communication networks, has rendered learning via the Internet, large networks or local area networks available from anywhere at any time.

According to *Sonia and Kavita*[HYPERLINK \l "Placeholder5" 4], India is stepping towards the e-learning sites to embrace the knowledge on new technologies leaving the traditional mindsets behind. By this, they concluded about the scope of e-learning that India would be surely becomes vibrant in using the e-resources as much as possible as the number of internet users are growing rapidly day by day, coloring a positive signal to the upcoming era.

According to *Arum and Vrishali* [5], In under developing and developing countries, e-learning is going to play a key role be it economically or socially. It increases the wave of people in rural areas to learn easily and adopt the methods of technology somewhere to improve their life cycle. He made it clear that India's education sector is going to bloom as learning modes are varying and being brought into the lives of people in the most welcoming way.

In the view of *Sunil et.al.*, e-learning [HYPERLINK \l "Placeholder7" 6] provides much knowledge and information than the traditional learning as the learning sites take much of care to include every minute point. According to them, it increases the pace of learning and helps in knowledge sharing through the circle formation within the site or through any other medium. Be it using in training or tutoring, India meet all the bounds of learning things electronically. Through this paper, they expressed that it would be faster to educate the massive number of people at a time, mainly in remote areas. Coming to the business organizations, this method would be much fruitful as there is no need to spend millions to educate and train the employees traditionally.

Components of e-Learning [HYPERLINK \l "CNB191" 7]:

The basic requirements of e-Learning courses are mainly categorized into 10 major components. These components including various resources such as Voice over (10.00%), Images (10.00%), Graphics (6.67%), Quizzes (13.33%), Power points (10.00%), Index (13.33%), URL's (10.00%), Tests (6.67%), Practical learning (3.33%) and Presentation (6.67%). The graphical representation of these resources is expounded in the form of pie chart as shown in figure 2.

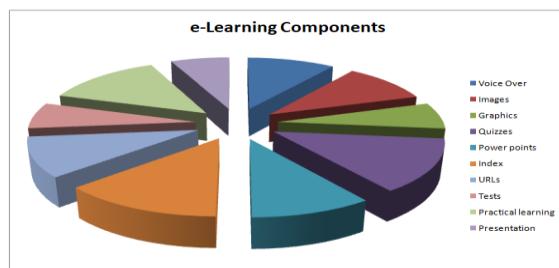


Fig 2. Components of e-learning

Leading sources of e-Learning:-

The following table explains about the most commonly used educational sites for various online courses based on its courses, users, cost, exams. Table 1 describes the eleven e-learning courses. Each course is further elaborated with source of the course or the provider of the course-its initiation year, the number of different courses offered by the provider, courses available, its corresponding Uniform Resource Locator (URL) , the organiser of the source, the number of users registered, certification fees, course fee, and whether they offering the exam for the registered course.

Graph on 5 most demanding skills in 2019:

Various organizations had conducted survey at several areas in India[HYPERLINK \l "CNB193" 8] regarding to e-learning courses. Interestingly 5 courses are indicated as major e-learning courses named as Cloud computing (15%), Artificial intelligence (25%), Analytical reasoning (20%), People management (20%), UX (User Experience) design (20%). The visual representation of these highly populated courses are elaborated in the following as shown in figure 3.

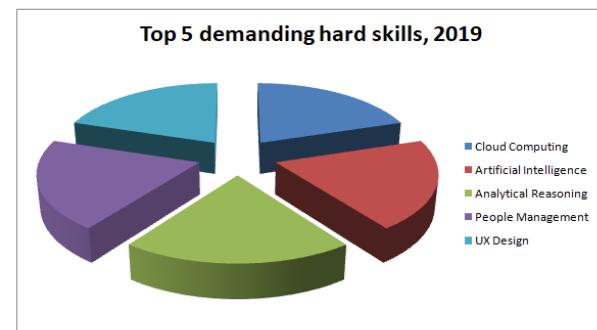


Fig 3. Demanding e-learning courses

III. SCOPE & RESULTS

Online learning is a wide platform to help students get more educated. With the E-Learning, the concept of learning has differed from the old times. This e-learning platform is widely increased as the each individual contains a smart phone with high speed internet through which, each can access the courses on the websites in minutes. Some report engines like KPMG released their research that, by the year 2021, the count of people who were using the e-learning platform can reach up to 9.6 million. This figure is huge in number. In order to help learners to get more knowledgeable, The Ministry Human Resource Development (MHRD) is creating more interest to users with their new courses, certificates, practicals etc.



This e-learning platform is creating its type of awareness which is available to the villages and all the cities.

NPTEL[[HYPERLINK \l "Placeholder8" 9 \]:](#) The MHRD which is human resource development initiated this NPTEL. The MHRD is merged with the IIT and IISC to develop the National Program Technology on Enhanced Learning (NPTEL). This platform NPTEL get their quality training courses from the colleges like, IIT Bombay, Delhi, Kanpur, Madras and from Bengaluru Indian Institute of Science. The NPTEL contains catchy deals which attracts users with their free video lectures and certificates. When after the full course was done by the user, the user have to get tested with the questions by the NPTEL and users who scores the target mark and more gets the certificate of the course they've done. Courses offered through the NPTEL, many courses are offered to the users that ranges from Aerospace to Bio Technology.

The courses are for the studies like:

1. Aerospace engineering, 2. Atmospheric science, 3. Automobile engineering, 4. Bio technology, 5. Chemical engineering 6. Computer science, 7. Electrical engineering, 8. Electronics and communication engineering, 9. Engineering design, 10. Environmental science, 11. Humanities and social science, 12. Mining engineering, 13. Nano technology, 14. Ocean engineering, 15. Textile engineering and lot more.

SWAYAMPRAHBA[[HYPERLINK \l "Placeholder2" 10 \]:](#) By the SWAYAMPRAHBA, the MHRD was providing 32 digital channels. The content of the Swayam Prabha was provided by the most trusted and rated e-learning platforms in India such that the feed was fresh. By this the viewers can develop new skills and new techniques according to their study. The content providers for the Swayam Prabha were The NPTEL, IIT. UGC. CEC. IGNO. NCERT and NIOS. Aspects: This Swayam Prabha offers courses for the UG and PG with topics like arts, science, commerce. fine arts, social sciences, humanities. engineering, technology, law, medicine, agricultural with curriculum based courses were greatly used by the students. This Swayam Prabha trains the teachers with the new methods of learning. By training the teachers, students can get more clarified about the subjects.

OPENCULTURE [[HYPERLINK \l "ope19" 11 \]:](#) The open culture was joined with the world class top universities to provide it's user the best material from the universities. Universities which help to create content on the open culture are Stanford university, Yale University, MIT (Massachusetts Institute of Technology) University, Harvard university and Oxford university. This open culture contains across 1300 free courses for their users and users can download the courses too.

KHANACADEMY [[HYPERLINK \l "kha19" 12 \]:](#) Educationalist Salman khan founded the website khan academy which aims to provide high quality education sparing the region of people. This is a non profitable academy which provides short YouTube videos in form of lectures. These short YouTube videos can be translated according to the user's perspective language. In the khan academic library there contains students from kinder garden to intermediate. They are provided with the expertise study of science, history, mathematics, economics, finance and

more. This khan academy also helps to prepare for the entrance examinations like SAT, LSAT, AMCAT, GMAT, IIT, JEE and more.

EDX[[HYPERLINK \l "EDX19" 13 \]:](#) The EDX was co founded by the universities Harvard and MIT. The EDX was completely founded without in the need of profit. The EDX was widely used as it is initiated by the top universities among world. Till date, the users of EDX was about 20 million. In this EDX, the users can access art and culture, biology and life sciences, chemistry, communication, economics-finance, health-lifestyle, environmental studies, philosophy, ethics, engineering, earth sciences, medicine and food-nutrition.

Udemy [[HYPERLINK \l "ude19" 14 \]:](#) The whole concept of the Udemy is to connect the user and the content creator i.e., the professionals. The Udemy offers free courses to their users. This Udemy differs a slight from other platforms as the users can modify and customise the courses according to their will. This Udemy was an on-going and successful platform as itself contains the population of 40 million users of students, 1.3 lakh of courses and more about 50k instructions are present.

ACADEMICEARTH [[HYPERLINK \l "aca19" 15 \]:](#) The Academic Earth web portal was designed in the year 2009. In this academic earth, there contains free lectures of UC Berkeley, University of Michigan, Oxford University, MIT, Princeton and Stanford University. This academic earth also contains academic lectures. By using this portal, the users can access on topics like arts and science, astronomy, biology, chemistry, computer science, economics, engineering, English, entrepreneurship, law, mathematics and 50 more courses.

COURSERA [[HYPERLINK \l "cou19" 16 \]:](#) This course era is an free online learning platform which was founded by both software professors Andrew and Koller in the year 2012. This course era was combined with the world class universities and institutions to provide the massively open online learning courses for their users. Engineering, humanities, biology, social sciences, mathematics, business, computer sciences, digital marketing and data sciences are the courses offers in this course era platform. This Course era platform itself contains the registered user count of 33 million, the courses offered are with the count of 2,400.

VIDYAMITRA[[HYPERLINK \l "vid19" 17 \]:](#) The MHRD, through National Mission on Education Through Information and Communication Technology (NME-ICT), providing a portal in the name of Vidya-mitra. In this Vidya-mitra, it offer its users with audio and video learning materials, textual material and the materials of multi media which helps the users with their courses. This Vidya-mitra portal allows user to browse the institute, subject for the under-graduate and post-graduate degree students.

SAKSHAT[[HYPERLINK \l "sak19" 18 \]:](#) In the thought of educating each person around the corner, the MHRD implemented the portal called Sakshat. Though there present numerous amount of e-learning portals present, there contains a lack of customising the course according to their needs. To eradicate this issue, this Sakshat helps its users to customise the course however they want. This

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Sakshat divides subjects and categories which gives user the whole new experience. By using this Sakshat portal, the Experts around the world can share their interests. Such that,

the experts can easily solve the difficulties of the users in the public domain. The Sakshat provides content like spoken tutorials, talk to teacher, virtual labs and e-page which are outraged.

Table 1. e-learning sources with the details of each source

S.No	Source	# Courses	Courses	URL	Organised	Users	Certification fee	Course fee	Exam
1	Edx (May 2012)	2,200	Web programming, Mobile apps, AI, Python etc	https://www.edx.org/	Massachusetts institute of technology & Harvard university	18 million students	Both free and paid	Both free and paid	Yes
					Seven IIT's (Bombay, Delhi, Kanpur, Madras, Kharagpur, Guwahati, Roorkee)	Enrollments: 6335382 Exam registrations: 627866	Yes	No	Yes
2	Nptel (2003)	934	web & video courses created at ug and pg level and many more	https://nptel.ac.in/	ErenBali, Gagan Biyani, Oktay Caglar	30million+ students and 50,000 instructors	Both free and paid	Both free and paid	No
3	Udemy (2010)	1,30,000	Programming languages, courses on business skills etc		Jeff Maggioncalda(CEO), Andrew Ng and Daphne Koller	33 million+	Yes	Both free and paid	No
4	Course ra -2012	3,600	Engineering, medicine, humanities,		Refsnes data - a Norway software development and consulting company.	50 million	Yes	Both free and paid	No
			Data science, business etc		Ryzac, Inc (owner) Zach sims, Ryan Bubinski	26 million	No	Both free and paid	No
5	W3 school s -1998	200+	HTML, CSS,	https://www.w3schools.com/	Ryan Carson, Gillian Carson	50000+	Yes	Both free and paid	No
			Java, Sql, Python, Php, color picker, Javascript, Bootstrap		Capemaum Ltd, Mike Feerick(CEO)	1.5million	Yes	No	No
6	Codecademy -2011	250+	Programming languages like Python, Java, Sql, C++, HTML,	https://www.codecademy.com/	Salman Khan	1,80,000	–	No	No
			CSS, SASS,etc		Michael Karnjanaprakorn, Malcolm Ong, Mathew cooper(CEO)	7 million	–	Both free and paid	No
7	Tree House -2011	300+	Web design, Web development, Game development, Mobile development	https://teamtreehouse.com/	The open university, Seek Limited	8.7 million	Yes	Both free and paid	No
8	Alison (2007)	1000+	Programming languages, courses on business skills, arts etc	https://alison.com/en	Capemaum Ltd, Mike Feerick(CEO)	1.5million	Yes	No	No
9	Khan academy -2008	100+	Maths, Science, Computing, arts, economic, test prep etc	https://www.khanacademy.org/	Michael Karnjanaprakorn, Malcolm Ong, Mathew cooper(CEO)	7 million	–	No	No
10	Skillshare -2010	200+	Arts, design, Technology, Entrepreneurship etc	https://www.skillshare.com/	Michael Karnjanaprakorn, Malcolm Ong, Mathew cooper(CEO)	1,80,000	–	Both free and paid	No
11	Future Learn -2012	300+	Coding, Business and Technology, Game development, social media, Cyber security etc	https://www.futurelearn.com/	The open university, Seek Limited	8.7 million	Yes	No	No

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IV. CONCLUSION

The growth of e- content that exists globally is detailed in this paper. Various benefits of e-learning were discussed that encourage the learning abilities of the user. Different kinds of content available through the world wide web is visualized through the pie chart. For the best approach of finding the suitable e- learning content is explained by tabular form in an aesthetic way, that provides the user for e-learning know-how. The reader can choose any of the resources available for his choice course.

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