

E - LEARNING: A 21ST CENTURY APPROACH TO EDUCATION

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ABSTRACT

A **learning** system based on formalized teaching but with the help of electronic resources is known as **E-education**. ... **E-education** can also be termed as a network enabled transfer of skills and knowledge, and the delivery of education is made to a large number of recipients at the same or different times. The popularity of E – education is increased day by day because of number of reasons - Every day, we turn to the Internet for gaining information, online courses have mushroomed like never before, virtual classrooms are on the rise, the number of students registering for such courses has shot through the roof. In addition, **e-education** has found its place in the heart of training incumbent personnel in the corporate sector. The World Wide Web (WWW) is being used to improve communication, collaboration, sharing of resources, promoting active learning, and delivery of education in distance learning mode. Through this paper, author is trying to focus on emerging trends in E-education system. E - learning is a very broad area of research in terms of education system.

Keywords: Distance Education, E-Learning, Education, WWW

INTRODUCTION

In 21st century we frequently encountered this term “e” like – e-government, e- hospital, e - commerce, e - marketing, e – governance, e – libraries, e- books, e – shopping, e – business, e – learning, e.t.c. What this “e” stands? Almost everything in 21st century has linked with “e“ which means electronic. Today World Wide Web (www) is a necessity. Everyone can use and learn from electronic devices. Today anyone can obtain education from anywhere, anytime through online education. Thus, breaking the shackles of traditional classroom and adapting to new and electronic learning Technologies empowers all learners irrespective of their diversities. This development in information and communication technologies (ICT) has resulted in a learning environment called e-learning. E-learning is essentially imparting education through computer and network enabled digital technologies which include among other things, internet, intranet, computer, satellite TV, CDROM, audio and video resources.

THE ROLE OF EDUCATION IN THE 21ST CENTURY

Our world is changing, and in this changing era we need to change the way we educate our children. In the 21st century educators must create a curriculum that will help students connect with the world and understand the issues that our world faces. Teachers in this new environment will become less instructors and more orchestrators of information, giving children the ability to turn knowledge into wisdom. The curriculum in the classroom is designed to incorporate many skills and intelligence levels, and makes use of technology and multimedia. The lessons are not based on textbooks, instead they are project based. Students have full access to technology and, if possible, every student will have a laptop. Within the school there will be labs and learning centers, as well as studios for art, music,

theatre, and so on. Each classroom will be equipped with a television so that all students can watch school productions and other school presentations. However, with the rapid progress in technology and the advancement in learning systems, it is now embraced by the masses. The introduction of computers was the basis of this revolution and with the passage of time, as we get hooked to smart phones, tablets, etc, these devices now have an importance place in the classrooms for learning. Books are gradually getting replaced by electronic educational materials like optical discs or pen drives. Knowledge can also be shared via the Internet, which is accessible 24/7, anywhere, anytime.

Definition of E-learning

E-learning is defined by many people, in many ways, since the term e-learning is used inconsistently, in order to gain a clear understanding of what e-learning is, here are a few definitions of e-learning. e-learning would incorporate all educational activities that are carried out by individuals or groups working online or offline via networked or standalone computers and other electronic devices.

- *Brandon Hall* defines E-learning as: "...instruction that is delivered electronically, in part or wholly via a Web browser, through the Internet or an intranet, or through multimedia platforms such as CD-ROM or DVD."
- *Rosenberg*: "E-learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance." Rosenberg claims that e-learning is based on three fundamental criteria:

- E-learning is networked, instant updating, storage and retrieval, distribution and sharing of information is therefore possible.
- E-learning is delivered to the end-user via a computer using standard internet technologies.
- E-learning focuses on the broadest view of learning: Learning solutions going beyond the traditional paradigms of training.
- *Derek Stockley* 2003 - E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material.
- *Allison Rossett* (2001) defines e-learning as: Web-based training (WBT), also known as e-learning and on-line learning, is training that resides on a server or host computer that is connected to the World Wide Web.
- *Jereb&Šmitek,2006* -"E-learning refers to educational processes that utilise information and communications technology to mediate synchronous as well as asynchronous learning and teaching activities"
- *Alonso et al.*, 2005- "E-learning is the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services, as well as remote exchange and collaboration"
- *Koohang & Harman*, 2005 - "E-learning is the delivery of education (all activities relevant to instructing, teaching, and learning) through various electronic media".

Thus, E-Learning is the use of technology to enable people to learn anytime and anywhere. E-learning can include training, the delivery of just-in-time information and guidance from experts. E-learning could also be considered distance education in an evolved form, which has taken advantages of all the emerging technologies for enhancing learning experiences of every learner. In that sense e-learning could be considered as a new generation of distance education.

Characteristics of E- learning

- **E-learning is Learner-Centric Learning:** The learner centric e-learning model makes learner, who is free to choose when, where and how to learn.
- **E-learning for lifelong learning:** With increasing access to technologies and its ever increasing sophistication this approach to learning facilitates lifelong learning among various stake holders.
- **E-learning is Flexible Learning:** No space or time is required for E-learning education, various technologies can be used to link learners, instructors and resources.
- **E-learning is Social:** E-learning seeks to foster collaboration and peers interaction. Various e-learning technologies facilitate various types of collaboration among learners and teachers.
- **E-learning is Personalized:** Usually e-learning system permits its users to personalize the learning by tailoring its offerings to their learning style, job requirements, career goals, current knowledge and personal preferences.
- **E-learning Involves Effective Communication:** The effectiveness of e-learning also depends on establishing two-way communication between teachers and learners, and among learners themselves.

E-learning Tools and Technologies

<p>Content creation tools</p> <ul style="list-style-type: none"> ○ Tools for creating avatars (virtual characters) ○ Course and lesson authoring tools ○ E-book tools ○ Graphics and animation tools ○ Image galleries and sound effects libraries ○ Assessment tools ○ Pdf tools ○ Video and simulation tools ○ Web page authoring tools ○ Survey and polling tools <p>Delivery and distribution tools</p> <ul style="list-style-type: none"> ○ Podcasting tools ○ RSS tools ○ Web casting and streaming tools ○ Presentation tools ○ Mobile learning tools <p>User Tools</p> <ul style="list-style-type: none"> ○ Operating system ○ Browsers ○ Media players ○ Plug ins ○ Pdf reader ○ Word processor 	<p>Communication and Collaboration Tools</p> <ul style="list-style-type: none"> ○ Discussion boards and forum tools ○ E-mail tools ○ Live support tools ○ Meeting and teleconferencing tools ○ Instant messaging and chat tools ○ Social networking tools ○ Social book marking and file sharing tools ○ Wiki tools <p>E-learning Systems</p> <ul style="list-style-type: none"> ○ Content management systems ○ Learning management systems ○ Course management systems <p>Hardware Tools</p> <ul style="list-style-type: none"> ○ PC/laptop/ net book ○ Smart phones/ palmtop computer ○ Printer / scanner/ speaker ○ Microphone /speaker/ web ca7
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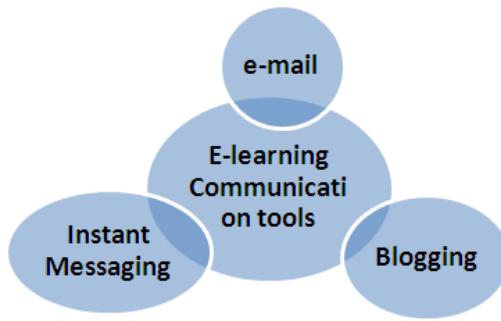
Types of e-learning

E-learning programmes can take many different forms. Here are just a few examples:

- Active learning
- Bite-size learning
- Blended learning
- Distance learning
- Online training
- Distance Rapid e-learning

Communication Tools of E Learning

Commonly used Communication tools used in e-learning include, e-mail, Instant Messaging and Blogging.



E-mail: E-mail stands for electronic mail; e-mail is defined as the transmission of messages over communication networks. There are many e-mail service providers and the most famous ones are Yahoo mail and G mail. Exchanging-mail messages with a mentor or peer is an e-learning experience.



WhatsApp

Instant Messaging(IM): Instant messaging is the exchange of text messages through a software application in real-time. Instant messaging allows learners to chat with one another through text messages. This has become very popular as here, everything is performed in a faster, more reliable and cohesive manner. Instant messaging helps teachers to create subject specific groups for exchange of information and sharing of resources. Instant messaging applications like WhatsUp are extensively used by teaching community as reliable communication tool.

Chat: Chat is synchronous communication tool facilitating online communication. This tool helps teachers and learners to schedule a discussion on a particular question or theme and later save the chat discussion for later use. The chat tool is an integrated tool in all the LMS and there are many standalone chat applications which can be used outside the LMS.



Blogging: A blog is your own website that you are going to update on an on-going basis. A blog is a frequently updated online personal journal or diary. It is a place to express yourself to the world and to share your thoughts and your passions. In blogs entries are commonly displayed in reverse-chronological order. Most blogs are interactive, allowing visitors to leave comments and even message each other via widgets on the blogs and it is this interactivity that distinguishes them from other static websites. Many blogs provide commentary or news on a particular subject; others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, Web pages, and other media related to its topic. The ability of readers to leave comments in an interactive format is an

important part of many blogs. Most blogs are primarily textual, although some focus on art (art blog), photographs (photo blog), videos (video blogging), music (MP3 blog), and audio (podcasting).

Collaboration Tools



we see most of the e-learning is also social. The learners learn through collaboration with peers in smaller or larger groups. The e-learning technology offers a number of collaboration tools to learn from one another, to work on assignments, Projects in groups and the like. Some of the popular collaboration tools include Chat, forum, wiki, online groups, audio/video conferencing, social bookmarking and social networking. Collaborative learning forums promote learner interaction through message boards, where students can post questions and answers; text chat or forums, where learners can communicate outside the main classroom; and threaded discussions, where facilitators and students can discuss a given topic and review each other's responses.



Wiki: A wiki is a collaborative web site that collects and organizes content, created and revised by its users. The most well-known example is Wikipedia. Wikis. There are many software which help to create online wiki and one of the most famous one among that is Wordpress. Wiki is also a feature available in all the Learner Management System. In an e-learning context wiki permits teachers to give many kind of task to the learners to collaborate and create content on any topic. Wiki platforms are used extensively to create and share open educational resources and in Karnataka the KOER initiative is developed on a wiki platform.

Social Networking Sites



Social Networking site is the phrase used to describe any Web site that enables users to create public profiles within that Web site and form relationships with other users of the same Web site who access their profile. Social networking can be used effectively for e-learning by creating specific interest groups. The learners within this group can share information, photographs, videos, graphics related to a particular topic. This can also be used by teachers to collaborate in generating and sharing resources online with ease thereby facilitating learning.

Web Conferencing: Web conferencing is highly interactive, Internet-based applications with a rich collaboration feature set (e.g. audio/video from presenters and learners, application sharing, white boarding and markup tools, breakout rooms, polling, quizzing, hand



raising and emoticon responses, slides and media, Web site tours, public/private text Chat). It is capable of scaling from small groups to hundreds or thousands of simultaneous users. In "synchronous e-learning," we refer to Web conferencing. Web conferencing technologies offer tremendous potential for robust interactivity and collaboration through their versatility and rich feature options. There are many online tools for organizing video/web conferencing to facilitate collaborative learning. Applications like BigBlueButton.

EPUB: Wikipedia defines EPUB as an e-book file format with the extension epub that can be downloaded and read on devices like smart phones, tablets, computers, or e-readers. It is a free and open standard published by the International Digital Publishing Forum (IDPF). The term is short for electronic publication and is sometimes styled ePub. Sigil is an open source epub authoring tool and caliber is an open source epub reader.

Podcasting: Podcasting is a form of audio broadcasting on the Internet. The audio files are developed and distributed using RSS to the computers of subscribed users. These files may then be uploaded to digital music or multimedia players like the iPod. A podcast can be easily created from a digital audio file. The podcaster first saves the file as an MP3 and then uploads it to the Web site of a service provider. Vodcasting (video-on-demand casting) is the same principle as Podcasting with the addition of video.



Podcasting/Vodcasting allows educators to reach students using a medium they are accustomed to. It can be used to interact with students and parents beyond the school hours and can be a great facilitator to increase student engagement. Student created podcasts/vodcasts give students the opportunity to enhance their organization, communication and technology skills.

Record classroom lectures, provide supplemental information, provide review sessions, record classroom discussions, interview with experts, student projects are some of the uses of podcasts. Therefore podcast is versatile medium for delivering e-learning specifically audio content.

Audio/Video Streaming: Streaming Audio/Video is content sent in compressed form over the internet and displayed by the viewer in real time. With streaming video or streaming media, a Web user does not have to wait to download a file to play it. Instead, the media is sent in a continuous stream of data and is played as it arrives. The services offered by YouTube are valued by e-learning providers world over. Many institutions have created their own exclusive channels for providing their e-content to the end users using YouTube. E-learning professionals use to make their e-learning courses more interactive, fun, and informative using YouTube. In fact, it has the power to transform a potentially dull or complicated subject matter into an overall exciting and engaging e-learning experience. E-learning providers like Khan Academy uses YouTube extensively in delivering their e-content.

E-LEARNING STANDARDS

According to ISO, standards can be defined as "documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purpose". The goal of standards is to provide fixed data structures and communication protocols for Learning objects and cross-system workflows. This enables interoperability between application, such as Learning Management System (LMS) or in-house developed content,

by providing uniform communication guidelines that can be used throughout the design, development and delivery of Learning Objects. There have been a number of efforts worldwide to develop standards for learning object interoperability. The standards support- Interoperability, durability, manageability, re-usability, and accessibility. These standards focus on content metadata, content packaging, and run-time communication to support tracking of student activities.

To this end, there are several organizations working toward standards and to make sure learning content is 'interoperable' with various learning management technologies. In recent years, groups like the Aviation Industry Computer-Based Training (CBT) Committee (AICC), the IMS Global Learning Consortium, Inc., the Institute of Electrical and Electronics Engineers (IEEE), the Alliance for Remote Instructional Authoring and Distribution Networks for Europe (ARIADNE), the Dublin Core, Sharable Content Object Reference Model (SCORM) and CanCore have developed specifications or guidelines for various aspects of learning object development and use.

ADVANTAGES AND POTENTIAL DRAWBACKS OF E-LEARNING

Advantages of e-Learning to the Trainer or Organization

- **Reduced overall cost** is the single most influential factor in adopting e-learning. The elimination of costs associated with instructor's salaries, meeting room rentals, and student travel, lodging, and meals are directly quantifiable.
- **Increased retention** and application
- **Consistent delivery** of content is possible with asynchronous, self-paced e-learning.
- **Expert knowledge** is communicated, but more importantly captured, with good e-learning and knowledge management systems.
- **Proof of completion and certification**, essential elements of training initiatives, can be automated.

Advantages to the Learner

- **On-demand availability** enables students to complete training conveniently at off-hours or from home.
- **Self-pacing** for slow or quick learners reduces stress and increases satisfaction.
- **Interactivity** engages users, pushing them rather than pulling them through training.
- **Confidence** that refresher or quick reference materials are available reduces burden of responsibility of mastery.

Potential drawbacks

Technology dependent: Learners will need access to a machine of minimum specification as dictated by the e-learning supplier or access to a service with a high bandwidth to transfer the course materials in a timely way.

Material Incompatibility: Some materials designed for one particular system will not function properly on another (for example, the Apple Macintosh and the Windows PC). Standards will help in the area.

Unsuitable for Certain Types of Training: Any skill that relies heavily on inter-personal contact although these courses could be supplemented by e-learning.

Unsuitable for Certain Types of Learners: e-learning requires a high-level of self-discipline and personal time management. E-Learners need to be highly self-motivated to take full advantage of the medium as often the online learning experience can be impersonal. Working through 'packaged' programmes can be irritating.

Reliant of the Quality of the Content: It is too easy for some institutions to defer the photocopying costs onto the learner by placing all lecture notes and course handouts online. Such practices often mean that the course materials are in an inappropriate format for online learning. Course providers need to develop new technical skills and course design skills to suit the new medium.

Expensive: Start-up cost of an e-learning service is expensive and the cost of production of online training materials is very high. Teachers must be confident that the extra costs are balanced with the benefits of delivering a course online. Significant time needs to be invested in course set-up and in ongoing maintenance (checking links, updating course content etc.).

Reliant on Human Support: E-learning is still dependent on help on either the course materials or the software.

Social/economic disadvantage: It can limit or prevent access by some student groups (for example, cost of equipment, online access and printing).

No Match for Face-to-Face Teaching: Electronic communication does not necessarily provide a good match for face-to-face communication and is more linear than face-to-face discussion.

Too Reliant on IT Skills: Learners may have limited IT skills, or be uncomfortable with electronic communication and need to learn how to use the medium effectively.

Disabilities: Students with visual or physical impairments may be disadvantaged.

Inflexible: Flexibility may be lost as adjustments to the course in response to student reaction are not easy to make once the course is underway.

Pedagogically Unsound: The electronic environment does not per se offer a pedagogically enhancing learning environment.

Conclusion

E-learning has many advantages and one cannot stand alone in flow of technology. One should learn and adopt technology. Adjusting class room teaching with e-learning will give countless advantages to the society. The schools which use E-learning technologies are a step ahead of those which still have the traditional approach towards learning. No doubt, it is equally important to take forward the concept of non-electronic teaching with the help of

books and lectures, but the importance and effectiveness of technology-based learning cannot be taken lightly or ignored completely. It is believed that the human brain can easily remember and relate to what is seen and heard via moving pictures or videos. It has also been found that visuals, apart from holding the attention of the student, are also retained by the brain for longer periods. Various sectors, including agriculture, medicine, education, services, business, and government setups are adapting to the concept of E-learning which helps in the progress of a nation. E-learning methods can be classified into Synchronous, Asynchronous and Blended Learning Methods. Modern Technology provides us with a plethora of options for communicating. The most common Communication tools used in E-learning include, e-mail, Instant Messaging and Blogging. Some of the popular collaboration tools of e-learning include Chat, forum, wiki, online groups, audio/video conferencing, social bookmarking and social networking.

Some of the Content Creation Tools/Authoring tools are Course and lesson authoring tools, E-book tools, Graphics and animation tools, Assessment tools, Video and simulation tools, Survey and polling tools.

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