E-learning: global education without walls

Neena Sawhney

Principal, Chandigarh College of Education, Landran, Mohali, India

Email: principal_ccemohali@yahoo.com

Abstract

The term Electronic Learning or e-Learning is being used with increasing frequency these days as the possibility for getting knowledge and information out to the learner at her/his own pace has opened a whole new world for knowledge transfer. In recent years avenues of knowledge dissemination have changed from "tech-nology-supported learning, distance learning and distance education" to "online learning and web-based train-ing" to "e-learning". Today, e-learning allows us to share and manage knowledge and skills of the professionals who work in our colleges and universities, and to get the right information to the right people, when and how they need it. Teachers and learners must realize that new opportunities are offered by modern on-line communication. A person with basic Internet and Web skills is open to a whole new world of knowledge, from free Web surfing and self-organized education – through on-line resources and familiarization with Internet culture, its places, sites, search engines etc. – up to a more structured approach.

Keywords: e-learning, World wide web, Online education, Web based training, Computer based training, Distance education, Global learning

In the 21st century as the world becomes a globalised village, technology has cut across borders and barriers to grant access to knowledge from remote corners of the world previously thought inaccessible. Computers and the World Wide Web have created a revolution of sorts by providing information at the click of a button or mouse to be more precise. Internet usage has increased manifold since the mid-1990s as the traffic on the public Internet grew by 100 percent per year, while the mean annual growth in the number of Internet users was thought to be between 20% and 50%. As of 31 March 2011, the estimated total number of Internet users was 2.095 billion (30.2% of world population). It is estimated that in 1993 the Internet carried only 1% of the information flowing through two-way telecommunication, by 2000 this figure had grown to 51%, and by 2007 more than 97% of all telecommunicated information was carried over the Internet. The world figures of internet usage indicating maximum number of internet user from China followed by USA, Japan, India and Brazil. However in terms of users in the population UK leads with 82 % followed by 80.9% of Koreans,79.9% of Germans,78.4% of Japanese and 78.2 % of Americans on the net.

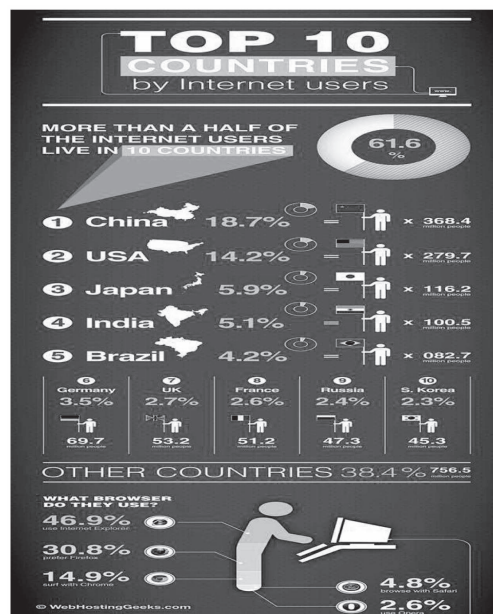Internet has had a revolutionary effect on the way individuals live,

Table 1: Showing Highest Users of Internet in the World

learn, play and ultimately learn, thus leading to a totally new medium of teaching and learning "e-learning" in a world wherein to all practical purposes higher education has gone virtually unchanged since the medieval period

What is E-Learning?

E-Learning is an umbrella term that describes learning done at a computer, usually connected to a network, giving us the opportunity to learn almost anytime, anywhere. It is not unlike any other form of education - and it is widely accepted that e-Learning can be as rich and as valuable as the classroom experience or even more so. With its unique features e-Learning is an experience that leads to comprehension and mastery of new skills and knowledge, just like its traditional counterpart.

The concept of e-learning is still vague to many of us in India. But it is catching up real fast in keeping with the West. In different sectors and with different people the meaning of e-learning differs. For instance, in the field of business it refers to the strategies used by a company network to give training to its employees. In many Universities, the term is used to mean a specific method to convey contents of course or program to the students online. Many higher education systems now a days are offering e-learning to their students. Online education is fast developing in the education system and is widely used in many universities and many research areas.

E-learning is undoubtedly a more flexible way of learning. Sometimes it is also used in combination with face to face learning. As e-learning initiate Bernard Luskin states "E" has a broad meaning in order for it to be effective that "e" should be inferred to mean exciting, expressive, educational, extended, and excellent in addition to "electronic" that is understood widely.

Many higher education institutes prefer education to be imparted online through a Learning Management System (LMS) in which all aspects of a subject are dealt with through a consistent standard process throughout the institution. Many Universities and Colleges are now offering academic degrees and certificate courses by way of internet of which many are delivered wholly online. In addition to this many educational institutions are also offering online support services to students, like online advising, e-counseling, online buying of valuable study material, etc. Thus e-learning with its more active and interesting opportunities is gradually replacing the traditional form of teaching.

With most teenagers now using the internet everyday for supporting their school studies with easy access to web pages, students now expect technology to play a strong role in their learning. This system is not only interesting for students but also enables students to work and learn at the same time, thereby making education more flexible. This makes communication with students easier. E-learning makes the students realize their responsibility in

their own learning. It is an interactive mode of learning, where the instructor plays the role more of a guide and a facilitator than of a teacher. The students get promptly involved in the process for they get quick feedback. Learners can easily access the correct and updated information whenever they want. Moreover it enables the learners to advance at a speed that suits them. The students continue getting their learning no matter where they are. Moreover there is also a discussion forum where learners can participate and discuss topics of their course with one another.

Definitions

The delivery of a learning, training or education program by electronic means. 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 (Derek Stockley, 2003)

Victor Jeurissen, global practice leader for IBM Management Development Solutions, defines elearning as: the use of innovative technologies and learning models to transform the way individuals and organisations acquire new skills and access knowledge (Moeng, 2004). He further defines learning as a collaboration of information, interaction, collaboration, and in-person.

In a May 2003 Chief Learning Officer article, Brook Manville defines elearning as: including not only Internet-published courseware, but also the tools for managing, modularizing and handling the following:

- Different kinds of content and learning objects (including both electronic and non-electronic forms, and even traditional classroom instruction).

- Just-in-time and asynchronous learning, such as virtual labs, virtual classrooms and collaborative work spaces.

- Simulations, document repositories and publishing programs.

- Tools for prescribing learning, managing development pathways and goals and handling e-commerce and financial transactions related to learning.

- The utilities and capabilities for supporting informal learning, mentoring, communities of practice and other non-training interventions.

In other words, e-learning does almost everything in the corporate world related to learning except for training!

Some other terms frequently interchanged with e-Learning include online learning, online education, distance education, distance learning, technology-based training, web-based training and computer-based training (generally thought of as learning from a CD-ROM).

Computer-based Training (CBT)

Computer-based courses are presented most often on CD-ROM, accessible any time for use at the desired pace of the user.

Benefits of computer-based training:

- Users can approach the material in a way that best suits them, skipping familiar sections or spending additional time on the difficult ones.

- Courses are portable and accessible without need for a network.

- Generally high quality of graphics and presentation.

Web-based Training (WBT)

Web-based courses permit your employees access at any time to the training they require. Employees log into an online training system with a user name and password to begin an interactive course. Costs are similar to computer-based training, but many web-based programs go further, permitting interaction with an instructor and an online community of fellow students.

Benefits of web-based training:

- Just-in-time training

- Suits all learning styles

- Higher retention of information/skills

- Continuous updating of materials and access to further resources

"Good teaching is good teaching, no matter how it's done." The old adage still rings true, and e-Learning brings with it new dimensions in education. Some of the unique features of e-Learning are listed below.

Features of E-Learning

- Learning is self-paced and gives students a chance to speed up or slow down as necessary

- Learning is self-directed, allowing students to choose content and tools appropriate to their differing interests, needs and skill levels

- Accommodates multiple learning styles using a variety of delivery methods geared to different learners; more effective for certain learners

- Designed around the learner

- Geographical barriers are eliminated, opening up broader education options

- 24/7 accessibility makes scheduling easy and allows a greater number of people to attend classes

- On-demand access means learning can happen precisely when needed

- Travel time and associated costs (parking, fuel, vehicle maintenance) are reduced or eliminated

- Overall student costs are frequently less (tuition, residence, food, child care)

- Potentially lower costs for companies needing training, and for the providers

- Fosters greater student interaction and collaboration

- Fosters greater student/instructor contact

- Enhances computer and Internet skills

- Draws upon hundreds of years of established pedagogical principles

- Has the attention of every major university in the world, most with their own online degrees, certificates, and individual courses

Types of E- Learning

There are fundamentally two types of e-Learning:

Synchronous and Asynchronous

1. **Synchronous**, means "at the same time," involves interaction of participants with an instructor via the Web in real time. For example – VCRs or Virtual class rooms that are nothing else but real classrooms online. Participants interact with each other and instructors through instant messaging, chat, audio and video conferencing etc and what's more all the sessions can be recorded and played back. Its benefits are:

- Ability to log or track learning activities.

- Continuous monitoring and correction is possible

- Possibilities of global connectivity and collaboration opportunities among learners.

- Ability to personalise the training for each learner.

2. **Asynchronous,** which means "not at the same time," allows the participants to complete the WBT (Web-based training) at their own pace, without live interaction with the instructor. Basically, it is information that is accessible on a self-help basis, 24/7. The advantage is that this kind of e-Learning offers the learners the information they need whenever they need it. It also has interaction amongst participants through message boards, bulletin boards and discussion forums. These include computer based training (CBTs) modules on CD-Rom's, Web based training accessed through intranet

(WBTs) or through well written articles and other write ups. Its advantages are:-

- Available 'just in time' for instant learning and reference.

- Flexibility of access from anywhere at anytime.

- Ability to simultaneously reach an unlimited number of learning.

- Uniformity of content and one time cost of production.

A new form of learning known as blended learning is emerging. As the name suggests it is an amalgamation of synchronous and asynchronous learning methods. Using both online training through virtual classrooms and also giving CD's and study material for self study is now being increasingly preferred over any single type of training

Objectives of E-Learning

To reduce learning costs: Any a small business owner, knows that doing transactions online costs a fraction as much as on paper, or in person. It's the same with e-learning — no paper, no delays, no travel expenses.

To reduce the time required for effective learning: e-Learning is sometimes called "just-in-time" learning. Employees can turn straight from their computer screens to apply what they have learned to the tasks at hand.

To motivate employees: e-Learning is an effective way to keep up with technology, to generate new ideas, and to keep your workforce fresh and inspired.

To improve flexibility of course delivery: Smaller businesses have few people to manage training and development initiatives and to track employee training. e-Learning technologies overcome administrative restrictions.

5. **To expand the capabilities of the business:** Smaller companies need to get more out of their high-potential people. e-Learning helps take these employees to a higher level of contribution.

1. **The Pedagogical dimension** of E-learning refers to teaching and learning. This dimension addresses issues concerning *content analysis, audience analysis, goal analysis, media analysis, design approach, organization and methods and strategies* of e-learning environments.

2. **The Technological dimension** of the E-Learning Framework

examines issues of technology infrastructure in e-learning environments. This includes *infrastructure planning, hardware* and *software.*

3. **The Interface design** refers to the overall look and feel of e-learning programs. Interface design dimension encompasses *page and site design, content design, navigation,* and *usability testing.*

4. **The Evaluation** for e-learning includes both *assessment of learners and evaluation of the instruction* and *learning environment.*

5. **The Management** of e-learning refers to the *maintenance of learning environment* and *distribution of information.*

6. **The Resource Support Dimension** of the E-Learning Framework examines the *online support* and *resources* required to foster meaningful learning environments.

7. **The Ethical Considerations** of e-learning relate to *social and political influence, cultural diversity, bias, geographical diversity, learner diversity, information accessibility, etiquette,* and *the legal issues.*

8. **The Institutional Dimension** is concerned with issues of *administrative affairs*, *academic affairs* and *student services* related to e-learning.

Advantages of E Learning

There are many significant advantages for the student who learns online. Here are just a few to consider:

Convenience and Portability

- Courses are accessible on your schedule

- Online learning does not require physical attendance

- Learning is self-paced (not too slow, not too fast)

- You're unbound by time - courses are available 24/7

- You're unbound by place - study at home, work, or on the road

- Read materials online or download them for reading later

Cost and Selection

- Choose from a wide range of courses to meet your needs

What E-learning is Not

What E-Learning IS	What E-learning is NOT
Non Linear - Learners determine how, what and when they access information	Linear - Learners must move through presentation in a predetermined sequence.
Dynamic Process - Transformed, personalized, customized on demand in response to learner and environmental variables. Available on demand and just in time.	Static Event - Learning is not an event that only happens when scheduled training occurs, it happens continuously.
Learner Controlled - Learner controls their own interaction with the content and presentation. Learner has opportunities for reflection and application.	Instructor Controlled - Instructor determines sequence, content, media and timing. Long simulations, or animations or Flash presentations are instructor controlled. Synchronous meetings are instructor controlled.
Reusable Objects - Content of any media that can be chunked down to the most granular, meaningful level to allow combinations of objects to be assembled and dynamically presented for different environments and functional needs.	Learning Objects or Knowledge Objects or Information Objects - By focusing the use of an object for only one environment, you remove reusability. Web standard enterprise level portal and CMS platforms should be used.
Informal - Recognizes that at least 70% of learning occurs in meetings, in the corridors and breakrooms, through collaboration, in situational communities.	Formal - Learning occurs w/o formal training presentations. Training is not the same as learning.
Platform Independent - can be transformed for use in a variety of standard formats - XML, HTML, DHTML, PDA, etc. in a variety of environments, both formal and informal.	Standards - AICC (Aviation Industry CBT Committee) , SCORM - (Sharable Content Object Reference Model - Department of Defense, USA) Why use these limiting standards from extremely different, strongly hierarchical environments?
Knowledge Management - Rich, flexible tools chosen to create, collect and distribute information, on demand and contextually, to learners, intra and extra organizationally.	LMS or LCMS - To manage the administrative and content aspects of training, usually supports a linear presentation of materials. Used to track learners, not the value of the learning processes
Communities of Interest - Collaborative, self selecting and organizing groups of individuals that share the same interests.	CoPs, Functional or Departmental - Limited by type of function, title or expertise.
RAD (Rapid Application Development) - Iterative, incremental design process. Define, design, refine processes are integrated and parallel. Continuously refining prototypes allows improvements to be integrated and tested with each iteration. Each iteration offers an opportunity to increase the penetration and acceptance of the learning support processes.	ISD - Linear approach to needs analysis, design and evaluation. Errors are geometrically compounded from wrong audience analysis, invalid sample audience, skewed survey results, wrong focus on weaknesses. Validity and usability issues are not discovered until training is delivered. By then it's too late to correct, adjust, or change because of the sunk resource investment in the deliverables.
Multi Channel: Learner <-> Learner, Content <-> Learner,Expert <-> Learner, Expert <-> Content,Expert <-> Expert	Single Channel - Trainer to Attendee

- Degree, Vocational, and Certificate programs

- Continuing Education

- Individual courses

- Wide range of prices to fit your budget

- Go back to school to get a degree, learn a new skill, learn a new craft, or just have fun!

- From art to zoology you can do it all online in a price range to fit your budget.

Flexibility

- Online learning accommodates your preferences and needs - it's student-centered

- Choose instructor-led or self-study courses

- Skip over material you already know and focus on topics you'd like to learn

- Use the tools best suited to your learning styles

Higher Retention

- Online learning will draw you to topics you like and enjoy.

Studies show that because of this and the variety of delivery methods used to reach different types of learners, retention is frequently better than in a traditional classroom.

Greater Collaboration

- Technology tools make collaboration among students much easier. Since many projects involve collaborative learning, the online environment is far easier (and often more comfortable) to work in since learners don't have to be face-to-face.

Global Opportunities

- The global learning community is at your fingertips with online learning. The technologies used give online instructional designers the ability to build in tools that take you to resources you may never see in a traditional classroom.

Disadvantages of E-Learning

Access	One disadvantage of eLearning is that learners need to have access to a computer as well as the Internet. They also need to have computer skills with programs such as word processing, Internet browsers, and e-mail. Without these skills and software it is not possible for the learner to succeed in eLearning. eLearners need to be very comfortable using a computer. Slow Internet connections or older computers may make accessing course materials difficult. This may cause the learners to get frustrated and give up.
Software and files	Another disadvantage of e-learning is managing scomputer files, software comfortability and learning new software, including eLearning. For learners with beginner-level computer skills it can sometimes seem complex to keep their computer files organized. The lesson points you to download a file which the learner does and later cannot find the file. The file is downloaded to the folder the computer automatically opens to rather than a folder chosen by the learner. This file may be lost or misplaced to the learner without good computer organizational skills.
High motivation	E-Learning also requires time to complete especially those with assignments and interactive collaborations. This means that students have to be highly motivated and responsible because all the work they do is on their own. Learners with low motivation may not complete modules.
Isolation	Another disadvantage of e-learning is that students may feel isolated and unsupported while learning. Instructions are not always available to help the learner so learners need to have discipline to work independently without assistance. eLearners may also become bored with no interaction.

However, the **advantages** far outweigh the disadvantages and thus we can safely elucidate the benefits of e-learning as follows:

- E Learning is less expensive to produce – Once you produce your own asynchronous training programs, e-training is virtually free once you reach the break-even point. Synchronous programs will have continued costs associated with the instructor managing the class, but will still be lower than traditional courses.

- It's self-paced — Most e-learning programs can be taken when needed. The learning material available is a module-based design allowing the learner to go through smaller chunks of training that can be used and absorbed for a while before moving on.

- It moves faster — According to an article by Jennifer Salopek in "Training and Development Magazine," e-learning courses progress up to 50 percent faster than traditional courses. This is partly because the individualized approach allows learners to skip material they already know and understand and move onto the issues they need training on.

- It provides a consistent message — E-learning eliminates the problems associated with different instructors teaching slightly different material on the same subject. For company-based training, this is often critical.

- It can work from any location and any time - -E-learners can go through training sessions from anywhere, usually at anytime. This Just-In-Time (JIT) benefit can make learning possible for people who never would have been able to work it into their schedules prior to the development of e-learning.

- It can be updated easily and quickly — Online e-learning sessions are especially easy to keep up-to-date because the updated materials are simply uploaded to a server. CD-ROM-based programs may be slightly more expensive to update and distribute, but still come out cheaper than reprinting manuals and retraining instructors.

- It can lead to increased retention and a stronger grasp on the subject — This is because of the many elements that are combined in e-learning to reinforce the message, such as video, audio, quizzes, interaction, etc. There is also the ability to revisit or replay sections of the training that might not have been clear the first time around. Try that in a crowded auditorium!

- It can be easily managed for large groups of students – The Learning modules allows corporate training directors, HR managers and others to keep track of the course offerings, schedule or assign training for employees and track their

progress and results. Managers can review a student's scores and identify any areas that need additional training.

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