

# Delivering E-Learning through Technology in Open and Distance Learning

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## Abstract

All over the World it is quite evident that the Open and Distance education Institutions are globalising the education with Information and Information Technology. Global competition has been changing dramatically in recent years as a result of liberalization, privatization and globalization. The use of E-Learning in Open and Distance Education Institutions is now spreading rapidly and globally.

**An attempt has been made in this Paper to highlight the importance of delivering E-learning through technology in Open and Distance Learning.**

E-learning offers Open and Distance Learning through the Internet. The Internet offers more interactivity, greater flexibility and more functionality, giving students an interactive educational experience and the opportunity to study through accredited learning providers. In order to tap the fast growing technological developments, this information age restructuring of conventional class room mode of instruction to on-line instruction is possible by making a shift in the methodologies from passive to active learning, from participatory to network and collaborative learning. E-learning is using the power of the network to enable learning of any thing, at any time, anywhere, at any place in the modern age of technological innovations.

E-learning is too new to have produced hard evidence of learning gains. Open and Distance Education is being transformed so radically that it demands new approaches and new pedagogical tools in building knowledge based society.

## Introduction

E-learning is technology-based learning. It is the ideal mechanism to provide information globally. It is the best way to provide education to the learners at minimal cost. It is being effectively used by the learners. All learners have equal opportunity to be on the internet. It also gives the opportunity to learn latest techniques and knowledge in Open and Distance Learning.

## E-learning – A Perspective

E-learning is the emerging term for intranet-internet enabled and technology distributed education and training. It uses the power of networks primarily those that rely on Internet technologies but also satellite networks, and digital content to enable learning.

E-learning is collaborative. Because people learn from one another, E-learning connects learners with experts colleagues and professional peers, both in and outside our organization. Every E-learner selects activities form a personal menu of learning. E-Learning is the delivery of content via all electronic media including the internet, intranets. Extranets, satellite broadcast,

audio/video tape, interactive TV and CD-ROM.

## SCOPE

E-learning has been initiated and for several years identified with distance education programmes

Academic, business and corporate organizations make use of E-learning.

Now, corporate and business organizations adopted the technique to train their employees for required skills. Thus it offers

- Individualized learning
- Group learning
- Virtual learning
- Flexible study
- Tools for teachers.

Electronic learning environments can be built using computer software. Popular, existing software packages applied for this purpose include the following:

**Client-based software**, that helps a teacher to create web pages and web sites.

**Server-based**, more specialized software that includes authentication, authorization and personalization of users and that offers some didactical modules, for instance for assessment, and a module for group communication.

## Technological Dimensions of E-learning

The technological dimensions of E-learning can broadly be classified into following three functions.

### 1. Access dimension:

Electronic Communication infrastructure required to allow teachers and learners to contact each other and to facilitate transfer of information and knowledge to the learner needs. The information exchange can be structured eg.,(EDI) or instructed (eg.,telephone). The information exchange

may also be through LAN (Local Area Network) or WAN (Wide Area Network).

### 2. Learning dimension:

Technology used is to support specific kind of structured information to the learner.

### 3. Support dimensions:

Technology used to lend administrative and technical support to the learners carried out in the electronic learning.

## COMPONENTS OF E-LEARNING

The following are the E –Learning components.

**Content Creation**, which includes Textual, graphics, multimedia, and Audio-video streaming.

**Content delivery** in Multiple Formats.

**Networked community of learners**, content developers, experts.

**Management of content and E-learning Experience.**

### Content Creation:

There will be two types of content, streaming and non-streaming. Streaming content includes real time audio/video whereas non-streaming includes the pictures, graphics, text etc. The streaming content goes to the media server while non-streaming content goes to the database server.

### Content Management:

An asset management system will manage diverse content stored in different servers such that the complexity of the heterogeneously distributed architecture is encapsulated from the user.

E- learning is inevitably a mix of activities – people learn better that way.

An E-learning environment generally includes:

### **Storing:**

The unbeatable efficiency of a PC in saving information can relieve the memories of teachers and students like. The systematic retaining and arranging of thematically relevant information, which is imperative for academic work can be integrated easily into the learning process. In the long term, skilful documentation management can be developed, an objectification of personal knowledge, which constantly changes and can continue to be developed over the period of a lifetime - if the documents will last that long.

### **Retrieval:**

This function is an exciting support of the process of recalling what students have stored in their memories. With the help of servers and search machines, information can be procured in internal and external databases, on Web pages or sites, in electronic libraries, dictionaries and professional journals, found and used. These sources of information, which are available globally, are easily accessible to students.

### **Communication:**

E-mail and video links mean that dialogues and discussions with teachers and other learners, but also with outsiders and strangers, can be sought and maintained at any time and from any place, depending on the situation on several levels, from simple chatting to academic discourses.

### **Collaboration:**

With the help of the communication referred to here, a series of important forms of joint planning, developing and evaluating are possible from any location simultaneously and consecutively, from working in partnerships through project work to collaboration of self-organised teaching and research groups.

### **Browsing:**

Browsing, surfing, navigating in the net extends the traditional search of information by reading in an unexpected way: A global cosmos of information becomes accessible. These activities lead to 'exploration learning' on the basis of one's own interests and preferences. They prepare and promote 'autonomous learning'.

### **Multimedia**

With the help of the accumulation, combination and integration of several presentation modes, teaching results can be presented and imparted in a particularly convincing manner. Teaching content can be presented intensively to learners in the same way as in reality and sometimes even more impressively. The modes of presentation include: text, two/three-dimensional graphics, pixel images and even video, audio and two/three dimensional animation. Electronic world processing can be a powerful learning device. Learners who are skilled in compiling, entering transmitting, processing, sorting, saving, linking and outputting information and, in addition, are able to create texts in the interface, to format them and structure them clearly, can draw immeasurable benefits from this for their learning. The link between reading, thinking and writing becomes important. This creates a specific learning behavior in which activities are concentrated and integrated which are far apart in real learning spaces. In addition, the exact semi-professional presentation and distribution of relevant findings are simplified enormously

### **Hypertexts and hypermedia**

Non-linear learning programmes presented by hypertext and hypermedia enable the learners to develop self-regulated, autonomous learning styles. They allow for strictly individualized, problem-oriented learning in complex fields of knowledge.

They support constructive learning processes and cognitive flexibility.

### **Simulation**

Learners can be put into a position in which they can contact simulated (model) reality. This is particularly advantageous if processes are observed or even controlled, for example, management science or macroeconomic trends or scientific experiments or real experiments in a virtual laboratory (Hoyer, 1998). Spaces are also simulated which students have to inspect or visit. Most computer games work with simulations which enable players to “experience” new spaces. Virtual museums and virtual guided tours work with similar effects.

**Learning Management System** which registers, tracks, and delivers content to learners; reports on learner progress, assessment results, and skill gaps for instructors; enroll learners, provides security, and manages user access for administrators.

**Content Distribution** – Content will be distributed through web servers, asset management system and database servers.

Collaboration – An essential requirement

An E-Learning solution must have built in collaboration tools like

- ?? Chat Room
- ?? Message Board
- ?? Discussion Forum
- ?? White Board
- ?? Electronic Hand Raising
- ?? Online Pooling
- ?? Mail Box
- ?? Survey Form

## **BENEFITS OF AN E-LEARNING SYSTEM:**

E -Learning empowers us:

- ??E- Learning allows an end user to learn at his own place, own pace and the time at which he likes.
- ??It is also considerably cheaper than Faculty Led Training.
- ??It can stimulate the teachers to rethink their pedagogical methods; this may lead to pedagogical innovation.
- ??Powerful interactive multimedia platform aids the Internet to give students remote access to knowledge, immediate assessment of their assimilation, certification of achievements, and instructor or peer guidance as required.
- ??The learner – centred courseware enhances learning process
- ??An electronic learning environment can offer some advantages in comparison with more classical tools to support teaching and learning.
- ??The new, exciting learning methods can attract new learners; this is important in the increasingly competitive field of Open and Distance Education.

### **E-Learning benefits for education**

In education the information from variety of sources like books, periodicals CBT, multimedia, audio/video can be collected and stored into a central repository and managed leading to rapid adoption of new programs.

### **Critical success factors:**

The critical success factors of an E-Learning tool designed in a user-friendly manner include:

- ??User-friendly navigation
- ??Built- in security system
- ??High level of interactivity through a host of collaboration tools.

- ?? Classroom sessions are very interactive and engaging due to a state of the art virtual classroom providing learning through streaming audio and video rich multimedia and graphics.
- ?? Learning both from faculty and from other learners
- ?? Feedback to students from faculty and vice-versa
- ?? Online Examination and Certification
- ?? Robust Content Management System
- ?? Back office support

### What is E-learning Tool?

E-learning tool is a complete, composite and customaries e-learning solution. It offers an engaging online environment that delivers the knowledge we need, when we need it, where we need it.

With E-learning tool one can conduct the virtual class room training sessions with any number of participants. A faculty broadcasts live from the training centre and is seen on screen at browser of users. Participants, irrespective of their location, can interact with other participants, faculty or management through various collaboration tools like real time voice chat or discussion forum. E-learning tool provides the most advanced system with user friendly interfaces and built in tools for handling all aspects or training, administration, course authoring, performance tracking and online examination.

**E-learning tool** can be effectively used in Open and Distance Learning.

E-learning tool is the right choice for a university with an enterprise wide study center network. The content creation and distribution can take place at remote places country wide or even worldwide. The Content could be placed at a central server from where it gets replicated to the local servers. Finally the content will be delivered locally from the local server instead of the central server as in case of Centralized

Deployment. This solution is ideal in case where Learning centers are at different places. Separate administration section will be provided for Learning –Center management to collect payments (if applicable) as well as learner management and Central –Administration section to control overall system.

### Functional Environment:

The environment is divided into following three sections:

- ?? Learner Section
- ?? Faculty Section
- ?? Management Section

### Learner Section

Learner can register at learning centre and opt for the course and also make the payments at the learning centre. Learner will be able to attend classes at any of the learning centre by logging on his valid ID and password. Classes will be delivered from centralized server to the learning centers as per the schedule. Learning centre can manage the payment system to Learners and activate /deactivate the login Ids of Learner registered at that particular centre. Learning Centre can monitor the attendance, performance, timetable etc. of those Learner only who are registered at his centre.

### Key features of Learner section

- ?? Virtual Classroom
- ?? Shared White Board
- ?? Electronic Hand Raising
- ?? Floor Control
- ?? Online Training Session through streaming audio video content along with presentation slides
- ?? Facility to have on demand content as per the learners pace of learning
- ?? Live interaction with fellow learner and faculty using tools like Chat, Discussion Forum, Message Board, Newsletters, and Mail Box etc.
- ?? Online Library facility for the learners.

- ??Download study material, white papers, Tutorials, Presentations and Catalogues
- ??Integrate an Online examination system for evaluation of learners

### Faculty Section

Faculty can register themselves by submitting their skill sets, experience etc. at learning centre. Classes can be delivered through centralized server only, therefore the presence of faculty is necessary at Centralised place. From Centralised place the class gets distributed to different Learning Centres. Faculty can access the solution from any learning centre by providing their valid login ID and Password. However, they can view the performance, feedback and scorecard of learners, who are registered with the centre.

### Management Section

Assimilation of courses, content creation, and payment mechanism shall be taken care of by central administration. Learning centre administration will manage the payment mechanism of learners and activation/deactivation of learners login ID, registered at that centre. Every learning centre will be able to validate the learners login ID and Password, thereby giving the access to solution.

### Key features for Management

- ??Faculty Manager to manage faculty section.
- ??Course Builder for addition/edition/deletion of course
- ??User manager to create e-mail Ids and for creation of user restricted area.
- ??Reporter to prepare learner and faculty reports.
- ??The courseware once developed is stored in a centralized repository where the content can be easily managed and also reproduced at any point of time in any form required.

- ??A mix or both Faculty led training and E-learning providers a very promising and engaging environment for an optimum learning experience.
- ??The learner management, faculty management, and management of course curriculum for individual franchisee centers can all be done from one central location.

### Delivery Media and Technologies

#### Print:

- ??Textbooks, Study Guides, Workbooks – are still very common in online learning courses.

#### Audio:

- ??Streaming audio-Used to deliver the instructors comments over any network.
- ??Audio tapes – could be mailed to students.

#### Video:

- ??Streaming video - Can deliver video over any network
- ??Video tape – Could be produced and mailed to students.
- ??Cable TV – Course segments can be produced and already in various locations nationwide.

#### DATA:

- Web Pages** – a very common form of delivering content
- CBT content** – often delivered via CD-ROM, but also deliverable via a Network.
- Computer files** – can be e-mailed or downloaded from a server (word processor, spread sheet, presentation, data base, etc.,).
- Online Tests** – Computer scripts can be written to deliver a variety of test Formats.

Phenomenal developments in Information and Communication technologies are exercising enormous impact on the ways in which instructional materials are created, stored acquired and delivered to end-users (Barker-1999).

In distance education, online learners need prompt and understanding feedback and support from their tutors.

Online learning could have its place for courses where multimedia features such as music, movies and animation can really enhance the learning materials.

Where discussion is important- say in tutorials or in smaller postgraduate courses – the use of web-conferencing and real-time forums would be valuable. But these advantages and others are dependent on suitable subjects, excellent web design and robust and widespread technology. Few tertiary institutions are pushing fully web-based learning.

### **Conclusion**

E- learning opens up new vistas for educational development and renders multiple learning techniques to the Open and Distance Learners. Internet is an electronic marvel of this century permitting to provide education online globally. E- learning helps learners in developing self-educational practices to acquire knowledge and explore possibilities to solve problems. This develops their decision-making faculties and improves conditions for mutual interaction between pupil and system.

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