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## E-learning System

The rapid advances in communication and information technology not only accelerate the trend of human's life but also change people's way of learning. People change careers and relocate several times throughout their live. The concept of traditional education does not fit well with the new world of lifelong learning, in which the roles of instructor, students, and curriculum are changing.

E-learning is a training operation that delivered by a computer (including CD-ROM, Internet, or intranet) that is designed to support individual learning or organizational performance goals.

E-Learning has become a cheaper, easier and more accessible alternative to the traditional face-to-face learning paradigm. While providing a viable alternative, e-Learning is also proving to be a very useful aid to accompany the traditional teaching approach.

E-learning can be characterized with three criteria; they are: a geographical distance separates communication between the trainer and the participant; the communication and interactive is two ways, and some form of technology is used to facilitate the learning process.

### Types of E-learning Systems

E-learning can be so valuable when used as a part of a well-planned and properly supported education and training environment, but e-learning is not a magic bullet that replaces or renders obsolete existing pedagogical theories and approaches.

E-learning would incorporate all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices. These various types or modalities of e-learning activity are represented in Table below.

**Table 11 E-Learning modalities**

<b>Individualized self-paced e-learning</b>	<i>Online</i>
	<i>Offline</i>
<b>Group-based e-learning</b>	<i>Synchronous</i>
	<i>Asynchronous</i>

- **Individualized self-paced e-learning online:** refers to situations where an individual learner is accessing learning resources such as a database or course content online via an Intranet or the Internet. A typical example is a learner studying alone or conducting some research on the Internet or a local network.
- **Individualized self-paced e-learning offline:** refers to situations where an individual learner is using learning resources such as a database or a computer-assisted learning package offline (i.e., not connected to an Intranet or the Internet). An example of this is learner working alone off a hard drive, a CD or DVD.
- **Group-based e-learning synchronously:** refers to situations where groups of learners are working together in real time via Intranet or

Internet. It may include text-based conferencing, and one or two-way audio and videoconferencing. Examples of this include learners engaged in a real-time chat or an audio-videoconference.

- **Group-based e-learning asynchronously:** refers to situations where groups of learners are working over an Intranet or the Internet where exchanges among participants occur with a time delay (i.e., not in real time). Typical examples of this kind of activity include on-line discussions via electronic mailing lists and text-based conferencing within learning managements systems.

E-Learning can be used for training at initial stages, to get new skills, or for continuous updating training. Learners also have the possibility to get access to experts on special topics to ask questions and get additional information and support. It can also be focused to different points of view referring to different kinds of learning and teaching. Figures below demonstrate different types of learning.

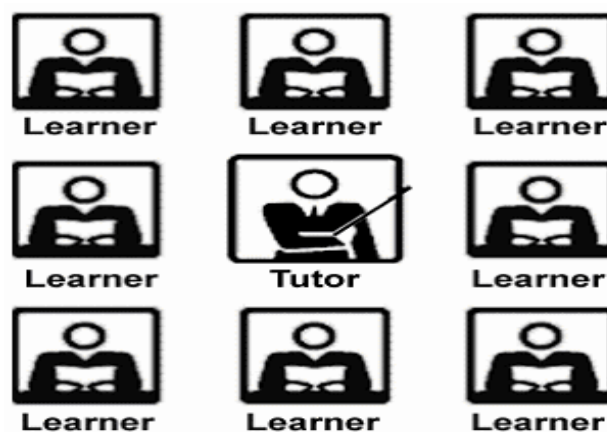


Figure (36) Tutor-based training



Figure (37) Learner-based training

## Virtual Classroom

A virtual classroom is an application of web conferencing technology, which allows computer users to communicate in real-time over the Internet or the intranet. Virtual class rooms are e-learning resources enriched with features, which try to offer the same communication and learning methods found in traditional class rooms but adapted to e-learning. Due to the advances in the computer, Internet, and broadband communications technology, students could connect directly to resources; work on real interactive and dynamic resource content as well as getting into contact with other learning students. Web conferencing is typically more than a simple text-based chat room; it allows groups of users to communicate in voice or video and to share all kinds of resources, such as slides, documents, electronic whiteboards (to which all users can contribute simultaneously), shared applications or even whole desktops, synchronized web surfing and much more. Virtual classrooms extend this technology to add sorts of

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features that make real-time, virtual training a practical option, including polls, questions, surveys, break-out sessions and record-keeping.

A virtual classroom session is like a face-to-face session interactive. It's important to engage your learners using the skills you'd use face-to-face, encouraging exploration and providing plenty of opportunities for practice. This is even more important in the virtual classroom, because you can lose your audience and not even know that they've gone. Trainers need to be creative to use the facilities provided by the software in ensuring maximum participation.

### **Instructor Led Training (ILT)**

Instructor led training provides instruction in a classroom or virtual classroom under the direction of an instructor or facilitator. Instructor-led training (ILT) often refers to traditional classroom training, in which an instructor teaches a class to a room of students. However, with the rise of virtual classes, ILT can also be conducted using Web Based Training (WBT) or e-learning platforms. Teleconferencing software, for instance, can be adapted to support ILT.

### **Self-Directed Learning (SDL)**

It's characterized by the option that individuals can access learning content whenever they want to. Content is delivered asynchronously such as from CD-ROM or over the Internet without an instructor, where the user controls the flow of learning material.

A self-directed learning experience provides several benefits to students including the potential for increased learning because of a greater feeling of ownership of the learning process, an increased responsibility for participating in the learning process, an expanded ability to use a variety of techniques to achieve learning goals, and an enhanced ability to present ideas in a wider variety of forms. The employment of self-directed learning approaches also provide several benefits to instructors including greater freedom to explore material, increased satisfaction because of students having more effective learning experience, and decreased teaching effort as the student takes on greater responsibility for learning.

### **Advantages of E-Learning**

E-learning is getting increasingly popular because it offers advantages to traditional learning. These advantages can be summarized as follows:

#### **1. Cost Effective:**

E-learning is more cost effective than traditional learning because less time and money is spent traveling. Since e-learning can be done in any geographic location and there are no travel expenses.

#### **2. Availability:**

E-learning has the advantage of taking class anytime anywhere. Education is available when and where it is needed. E-learning can be done at the office, at home, or even on the road, its available 24 hours a day, and seven days a week.

### **3. Flexibility:**

E-learning is flexible and can be customized to meet the individual needs of the learners. Learners can fit e-learning into their busy schedule. If they hold a job, they can still be working with e-learning. If the learner needs to do the learning at night, then this option is available. Furthermore, e-learning allows students to select learning materials that meet their level of knowledge, interest and what they need to know to perform more effectively in an activity.

### **4. Convincement:**

Students like e-learning because it accommodates different types of learning styles. Students have the advantage of learning at their own place. They can also learn through a variety of activities that apply to many different learning styles. E-learning presents Information in different modes to accommodate individual differences between learners in processing and to facilitate transfer to long-term memory.

### **5. Performance Measurability:**

E-learning also has measurable assessments which can be created so both the instructors and students will know what the students have learned, when they've completed courses, and how they have performed. Self-check questions and exercises with feedback throughout a lesson are good strategies to allow learners to check how they are doing, so that they can use their skills to adjust their learning approach if necessary.

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## Disadvantages of E-Learning

Next we look at the disadvantages of e-learning. One disadvantage of e-learning is that learners need to have access to a computer as well as the Internet. E-learners 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.

Another disadvantage of e-learning is managing computer files and online learning software. For learners with beginner-level computer skills it can sometimes seem complex to keep their computer files organized. Without good computer organizational skills learners may lose or misplace reports causing them to be late in submitting assignments. Some of the students also may have trouble installing software that is required for the class.

Also students may feel isolated from the instructor. Instructions are not always available to help the learner so learners need to have discipline to work independently without the instructor's assistance. E-learners also need to have good writing and communication skills. When instructors and other learners aren't meeting face-to-face it is possible to misinterpret what was meant.

## E-learning System Design

Generally, the basic components of an e-learning system are:

1. **Students:** people, who are using e-learning system part of e-education system to achieve the learning goals.
2. **Tutors:** people, who are using e-learning part of system that monitor, guide, help and assist students when trying to achieve learning goals.

3. **E-content:** e-content presents learning goal and should describe the way, how that goal can be achieved. E-content should provide students with all important information, and the ways of self-evaluation. Computer based presentation enables to enhance e-content with multimedia and interactive elements.
4. **Technology:** obsolete classroom education is very poor. In an e-learning environment, education includes a PC and a digital projector, and maybe a digital blackboard. Also e-learning environment should be accessed using a web browser over the internet or intranet. To fulfill its task e-learning environment should provide different ways of interaction, communication and collaboration among all participants in e-learning.

## Learning Management Systems

Learning Management Systems (LMS's) are software products aimed at planning, delivering and managing learning events. Among other things, they can control students' and teachers' access to a teaching / learning system and their actions within it, support administrative practices such as students' enrolment, and help to produce reports of students' activities.

An e-Learning system requires an LMS, to store and manage the teaching content. The LMS plays two important roles which are, delivering the desired Courseware when and as needed and also tracking the learner's reactions and responses.

## Learning Management System Services

Learning Management Systems typically provide a wide set of functionalities to support students' learning. Although each LMS has its own specific features, most LMS's share several common functionalities. Some examples of these common functionalities are: file storage, file sharing, forums, calendar, news, e-mail, chat, submission management system, groups' management, surveys organization, assessments, FAQs (Frequently Asked Questions) and scheduling discussion.