

E-Learning - An Overview

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Abstract: Learning is the process of acquiring new or modifying existing knowledge, behaviors, skills, values, or preferences. A person can be physically present in the classroom, but mentally absent, and no one would know. But in an online environment, especially during live discussions, each participant has to be mentally present to progress towards the learning goal of the discussion. E-learning is a form of instruction that uses electronic means, primarily e-mail and the internet. This format precludes direct teacher-to-student interaction as is normally found in the classroom. Learning is completely self motivated. Student must manage their time and complete tasks on their own within the given time frame. Some students are not capable and do not have the required self discipline to learn via the internet. Their learning styles may differ and they may not be able to comprehend information without further explanation from a teacher. The role of teachers in online learning is that of facilitators. They are not there to teach the students, but to simply to act as facilitators. A shift from a curriculum-centered to a learner-centered environment makes eLearning a winning proposition. This paper discusses about e-learning and its contribution towards educational field.

Keywords: E-learning, infrastructure, barriers, benefits

1. E-Learning

A learning system based on formalized teaching but with the help of electronic resources is known as E-learning. While teaching can be based in or out of the classrooms, the use of computers and the Internet forms the major component of E-learning. E-learning 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.

E-Learning has many interpretations but in short it stands for learning by electronic means. This means learning not directly from lecture notes, books or face-to-face from teacher but through electronic means. Common forms are computer-based training and web based lessons or on-line lessons. With the advent of advanced technology, lessons may be taken anytime anywhere. These lessons can be made more interesting using multimedia i.e. combination of text, graphics, sound and animation. Lessons can be delivered to the learner via various means e.g. PC, PDA, mobile phone and TV. E learning can be further categorized into formal lessons, which are structured, and informal means e.g. discussions, e-mail etc. The much talked about life-long learning through E-Learning includes both types of learning to help solve performance problems.

Types of E-Learning

1) Synchronous E-Learning

Synchronous learning: learning and teaching takes place in real time (same time) while the trainer and learners are physically separated from each other. Example: listening to a live radio broadcast, watching live a television broadcast, Audio/video conferencing, Internet telephony, online lectures, two-way live satellite broadcast.

2) Asynchronous E-learning

Asynchronous learning is the fact that that the trainer prepares the courseware material before the course takes place. The learner is free to decide when he wants to study

the courseware. In other words Asynchronous e-learning where people are not online at the same time and interaction does not occur without a time delay, allowing people to participate on their schedules. Example: self paced courses taken via Internet or CD-ROM, videotaped classes, stored audio/video Web presentations or seminars, recorded audio tapes, reading e-mail messages.

2. Infrastructure for E-Learning Platform

- 1) **The Personal Computer** The Personal Computer is the basic tool required to access E-Learning. Listed below are some common components and their minimum configurations in a PC to support E-Learning.
- 2) **Processor:** The CPU (or microprocessor) is the "brains" of a computer. It processes the information that is fed into your computer. For the E-Learning environment, current Pentium-based PCs are more than adequate to meet the needs.
- 3) **RAM:** RAM is where the operating system, application programs, and data that are currently in use are kept so that they can be quickly reached. Typically 64MB of RAM is sufficient for E-Learning applications. More RAM is recommended if cost is not an issue.
- 4) **Input Devices:** The keyboard and mouse are essential input devices for a PC. . A mouse is essential in "drag and drop" interactive exercises.
- 5) **Storage devices:** All of the data in a computer comes mainly from a storage device. For permanent storage, mass storage devices such as floppy disks, hard disks, CDROMs, CD-RWs would have to be used. A typical computer today would have a hard disk in the 20 Gigabyte range, a 24X CD-ROM drive and a 1.44MB floppy disk drive. CD-ROM-based training programs today are usually multimedia in nature. As such, a CD-ROM drive that has a high transfer rate would be ideal.
- 6) **Video Adapter:** The video adapter is the link from your computer to your monitor. A good video adapter is essential for displaying clear, crisp text and images. Together with a good monitor, the strain on the eyes is much reduced when viewing the computer screen for

extended periods of time. For the E-Learning purposes, a video adapter with 32MB of memory on board can help to speed up the screen displays.

- 7) **Soundcard, speakers & headphones:** Most sound files are optimised for ELearning, high-end sound cards for playback are not essential. Any Sound Blaster or its range of compatible sound cards will be adequate for E-Learning purposes. Ideally, a good pair of speakers or headphones is needed to supplement the sound card.
- 8) **Internet connectivity for shore & ships:** As the Internet has become a primary mode for delivery of E-Learning materials a connection between the PC at home and the ELearning service provider is needed. The telephone modem converts the binary data from the computer into analogue signals that is then sent through a phone line. At the other end, another modem receives the analogue signals and converts them into digital signals. Telephone modems are designed to transmit data at certain speeds. The fastest telephone modem available today is 56 kilobits per second (56Kbps).

3. Benefits of E-Learning

- **Multiple Delivery Options:** E-Learning makes it easy for you to deliver training to your workforce through a variety of deployment options over Internet, intranet and CD ROM
- **Just-in-Time Training:** E-Learning is easily accessible to employees and students. There is no waiting for classes. It can be used just before doing a task at place of work.
- **Administrative Control and Reporting:** With learning management software, administrators can quickly and easily access detailed reports to verify student progress, quantify training investments, and plan effectively for the future.
- **Engaging and Effective:** Benefit from the powerful combination of audio, animation and software simulations that produce highly engaging multimedia training. Courses today use realistic simulations, hands-on exercises, and role-playing scenarios to help employees "learn while doing".
- **Assessment:** Student assessment can be a powerful and helpful aid in the learning process. With many E-Learning products, pre-assessments are available to determine which topics students are already familiar with so that they can focus on key areas where they need help. This reduces the frustration of training on familiar content, and the amount of time spent training is condensed by as much as 50%! Students can also take quizzes throughout the training process to test their understanding.
- **Increased Productivity:** Training is a proven benefit and incentive to employees, giving them the opportunity to advance their skills and careers. Employees that have the skills to successfully do their jobs will be more motivated, effective, and productive.
- **Lower Cost:** E-Learning is available at a fraction of the cost of classroom learning and is provided right to student's desktops, eliminating the need for travel and expense.

4. Barriers to Implementing E-Learning

If E-Learning is to live up to its expectations one must be overcome of its Technological, Social and Pedagogical barriers, including the change of mindset required. These restraints must be overcome before implementing E-Learning.

- **Technological aspect:** E-Learning requires a reasonable technological infrastructure. Wherever this is lacking, E-Learning cannot happen smoothly. The initial capital outlay for setting up the infrastructure for E-Learning can be high, including setting up of servers, PCs and Internet at reasonable access speed of at least 56K. For synchronous or asynchronous learning event, the necessary tools are required.
- **Social aspect:** Learners tend to feel isolated. Trainers are worried that they will lose their jobs. Learners and trainers need to pick up skills for On-line learning and training.
- **Pedagogical aspect:** It is imperative to familiarize Learners and Trainers with new way of learning because education will become more learner-directed than instructor directed. Learners need to discipline themselves, and learn a new way of learning, gathering information, getting resources, and sharing knowledge & experience with others.
- **Mindset aspect:** E-Learning requires a total change of mindset. In any organization that wants to implement E-Learning, strong support from senior management is extremely important. Major stakeholders may become the greatest limitations to ELearning implementation if they are not ready for it.

5. Conclusion

E-learning is not intended to replace conventional methods and learning in classroom. Its aim is to create an augmented learning environment where technology is used to deliver a combined range of teaching and learning techniques aimed at maximizing the individual's participation and achieving the goals in the learning and teaching process as a greener world. E-learning offers opportunity to raise standard of education.

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