E-learning Types and Techniques

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Abstract :

E-learning should engage the learner, allowing them to interact with the course materials, obtaining feedback on their progress and assistance whenever it is required. However, the degree of interactivity in e-learning depends on how the course has been developed, and generally is dependent on the software used for its development, and the way the material is delivered to the learner.

المستخلص :

التعليم الالكتروني يجب أن يتفاعل مع المتعلمين وان يوفر لهم فرصة التواصل مـ عمـ ـ ـوادهم الدراسية والحصول على ردود أفعال بخصوص تقدمهم ويوفر لهم المسـاعدة عنـد احتيـاجهم لها. وعلى كل حال فان درجة التفاعل تعتمد على كيفية تقدم المادة الدراسية وعلى كيفية تقديم المادة الدراسية .

1. Introduction

E-learning can be presented and delivered to the learner in many different ways and for a range of purposes. Important in any e-learning is the degree of interactivity for the learner, and whether the learner is able to study at any time, or whether there is a need for the learner to be online or in a classroom with other learners at the same time (synchronous learning). Other things to consider are whether an instructor is required, whether the learning is blended or not, how the course is delivered, whether the course is accessed through a learning

portal, and whether a management system is required to look after the administrative aspects of the course, or updates to the course content.

2. Blended learning

Blended learning refers to the integration of e-learning tools with traditional learning methods, and is commonly understood as combining instructor-led training and e-learning , or combining face-to-face training and distance learning. These situations tend to combine e-learning with some sort of trainer-led approach, although the latter has been broadened to include e-mentor or e-tutor roles, as well as virtual classrooms. [1]

Some examples include:

- e-learning can be mixed with different types of classroom experiences, such as formal classes, discussions and tutorials
- the learner in an e-learning environment can interact with other learners and instructors in a virtual learning community. This may be through discussion lists, chat rooms, virtual classrooms and email communications
- if the e-learning course teaches a skill, there should be a demonstration of the fact that the learner has acquired that skill offline, usually in a classroom or workplace setting
- instructors associated with e-learning courses can have different degrees of interactivity with their learners, either on an individual basis or in a group setting, arranging this either formally or informally as a need arises.

Blended learning can have a number of advantages:

- it can accommodate a range of learning styles, ensuring that learner needs can be catered for more effectively than through e-learning only
- if it involves interaction between the learner and instructor, this often improves learning

- it can facilitate extensive learner to learner interactions
- it can increase the pace of learning because it's on demand learning - and enables the training of larger numbers of people in shorter periods of time than is possible with classroom training.
- it can make learning more relevant by allowing for learning in context. For example, demonstrations on real equipment can improve the understanding of how to use that equipment.

3. Synchronous and asynchronous learning

Synchronous e-learning requires the learner to be online with the instructor at the time they are learning. Other learners may be online at the same time. [2] Asynchronous e-learning still enables the learner to interact with other learners and the trainer, but does not necessarily require the learner to be in contact with any other learner or instructor at the time they are learning. It should be noted that restraints can be put on asynchronous learning: for example, learners may be required to complete a course within a given time.

Some e-learning combines both synchronous and asynchronous forms.

Synchronous learning	Mixed mode	Asynchronous learning
The learner is online at same time as an instructor or other learners.	For at least some of the time, the learner is online at same time as an instructor or other learners.	The learner is not online at same time as an instructor or other learners.
An instructor usually is required.	An instructor is required for at least some of the time.	An instructor is not necessarily required.

The study is not self-paced, but when delivered in a blended mode can be self-directed.	Only some of the study is self-paced.	This is truly self-paced study, although time restraints may be set for completion.
The learner gains immediate feedback from the instructor and other learners.	The learner can gain both immediate and delayed feedback.	The learner gains feedback from the instructor either not at all, or after a delay.
Examples: chat groups, virtual classrooms, videoconferences, teleconferences.	Examples: uses any of the examples from both synchronous and asynchronous modes.	Examples: email communications, online forums, discussion lists.

4. Delivery method

The delivery of e-learning can range from an HTML-based online tutorial, which relies on web pages accessed through a browser, to text and graphics on a mobile device like a personal digital assistant, to screens rich in interactive video, text, images and audio delivered from a CD-ROM.

At the high end, enterprise level systems can provide for the establishment of entire corporate learning programs, based on detailed competency specifications that allow individuals to follow customized learning pathways for a multitude of learning outcomes. These enterprise systems exploit the capacity for online delivery to present multi-media content (text, sound, video) and complex interactivity (such as real-time feedback and assessment). They provide also for

authoring of learning content and delivery of content authored to interoperable standards. [3]

Smaller scale technologies include the following:

- HTML pages
- PowerPoint presentations
- webcasts
- podcasts delivered on an iPod or similar technologies
- blogging
- Internet telephony (Voice over IP)
- e-books on PDAs or mobile devices
- wikis.

Larger scale technologies include the following:

- streaming audio -used to deliver the instructors comments over any network
- streaming video - can deliver video over any network
- web pages - very common form of delivering content
- interactive content - often delivered on a CD-ROM, but also deliverable through the Internet and local area networks
- online tests
- interactive tools - these could include web forums (asynchronous), discussion lists (synchronous), chat rooms, teleconferencing and videoconferencing
- MUDs (Multi-User Domain, or Multi-User Dimension) – these are computer programs, usually running over the Internet, that allow multiple learners to participate in virtual-reality role-playing games
- learning management systems (LMS) and learning content management systems (LCMS) – these are high-end e-learning applications that allow for online content development, learning management and learning delivery, and provide additional

technological benefits that can take the concept of organizational learning into the area of knowledge management.

A learning portal is a website that contains links not only to learning material, but also to a range of resources and useful information, making that site a gateway (portal) to this information. Usually such a portal is a part of the intranet of the organization. It generally is successful only if it is kept up to date, and the content is changed regularly to encourage learners to make repeat visits to the portal.

The following items could appear on a learning portal:

- news about any issues related to the education and training program of the organization
- a listing of available courses (including those not classified as e-learning, with links to and information about each
- an overview of the support that is available to learners
- links to resources available to learners
- information about the team of instructors
- contact details for anyone involved with the support of the courses, including support with the technology
- access to learning communities (such as chat rooms and discussion lists), and a log-in area to allow learners to access information about the courses they have completed and their course results. This may depend on a learning management system tracking this information.

5. Management systems

There are two types of management systems commonly used in e-learning.

LMS. A learning management system (LMS) is a computer program for tracking learners doing an e-learning course. An administrator can track the progress of individual learners, their scores on assessments, and have an overview of the progress of any cohort of learners.

Learning management systems can assist with scheduling, distribution of materials to learners, and provide a great deal of understanding of how well learners are coping with the course.

LCMS. A learning content management system (LCMS) is software that allows an administrator to update content on an e-learning website without needing specialist web page editing skills. An LCMS ensures that the styles of the site are retained, and that the course content remains current for learners.Some software incorporates the features of both an LMS and an LCMS. [4]

6. Learning Management System (LMS)

When considering a learning management system, take these things into account:

- will it be hosted on your organization's computers, or do you need to outsource this?
- what information do you want the LMS to track?
- will you be able to customize it to your needs?
- will you easily be able to add or delete learners and courses, and use the other features of the software?
- does it need to connect to other information in your organization, such as human resources records?
- what will it cost, and how are the charges applied?
- should it also have a content management capability?

There are three ways to obtain a learning management system:

- use one of the existing free learning management systems. This has the advantage that it is free, but it also means that it may have significant limitations for you. Examples include [Moodle](http://moodle.org/) (http://moodle.org/), [ATutor](http://www.atutor.ca/) (http://www.atutor.ca/), and [The Manhattan Virtual Classroom]

(http://manhattan.sourceforge.net/), although many others are available

- pay for one of the systems available online (often the charge is based on the number of learners and the amount of customization required). These usually can be tailored more for your specific requirements, but still may not do everything you require. Examples include Ecampus (http://www.ecampus.com.au/), Blackboard (http://www.blackboard.com/) and Janison LMS (http://www.janison.com.au/janison/default.asp), but many more are available. Further information about choosing an LMS can be found on the Australian Flexible Learning Network website at the page on How to choose a learning management system pay for the development of an LMS that is tailored to your specific needs. While more costly initially, this option often proves cost effective in the longer term, and will provide everything you would require of your LMS.

7. Learning Content Management System (LCMS)

A learning content management system has a number of characteristics:

- it allows the creation of content, including incorporation of text, graphic and movie files into the content
- it allows content to be checked for consistency, and old content to be archived
- it allows for creation of online assessments, and for their marking
- it permits content to be searched for by the content producer
- it may allow collaboration between several content producers
- it allows links to be forged between e-learning and other learning strategies that have been adopted by the organization.

The decisions about obtaining an LCMS are similar to those for obtaining an LMS: use freely available software, purchase software, or

pay to have the LCMS developed for your specific needs. The consequences for each decision are as described above for the LMS software choices.

8. Learning objects

A learning object is a discrete unit of e-learning that can be used on its own, or in combination with other learning objects to create a learning sequence. By meeting strict standards, learning objects can be re-used in combinations useful to the learner.

The advantage of learning objects is that once they have been developed as discrete units, they can be recombined in various ways depending on the needs of the learner. That is, they become a library of learning units.

The implication of this is that each learning object must meet well-defined standards.

The Learning Federation, whose role is to create online curriculum materials for Australian and New Zealand schools, has developed guidelines for learning object development .The Australian Flexible Learning Framework has a Learning Object Repository Network Project that aims to build the capacity of the Australian vocational education and training system to share teaching and learning resources that support flexible delivery through the establishment and embedding of agreed principles in the design and development of resources and resource repositories. The Australian Flexible Learning Toolboxes are now available as learning objects . [5]

References

[1] Margaret Driscoll, Blended Learning: Let's Get Beyond the Hype, IBM Global Services, 2010.

[2] Stefan Harstinski, Synchronous and Asynchronous e-learning, 2008.

[3] Australian flexible learning framework, Commonwealth of Australia 2007.

[4] Jay Cross & Ian Hamilton, The DNA of e-learning, Internet Time Group, 2002.

[5] E-learning in Nonprofit and Association, www.nten.org, 2010.