

## **E-Learning Tools: Tools for an Efficient Learning**

**Malatesh Akkur<sup>1</sup> and Dr. D.H Rao<sup>2</sup>**

*<sup>1</sup>School of Graduate Studies, Jain University, Bangalore.*

*<sup>2</sup>Principal and Director, Jain Engineering College, Belgaum.*

*[<sup>1</sup>malateshakkur@gmail.com](mailto:malateshakkur@gmail.com)*

### **Abstract**

Recent advances in computers and multimedia technology have brought tremendous changes teaching-learning and training and learning methods. E-learning is playing a major role of any academic and industrial training programs. E-learning system can personalize learning requirements for the learners. It provides an environment where virtual reality techniques are used to create interactive interfaces. E-learning does indeed have many dimensions and approaches, with associated spheres of influence. E-learning Tools play very important role in any E-learning System. The design and implementation of E-learning tools is a big challenge across the world. In this paper we discuss about definitions of E-learning and some of the E-learning tools.

**Key Words:** Computers and multimedia technology, E-learning, E-learning Tools, virtual reality techniques.

### **1. INTRODUCTION**

Almost everyone, some way connected to education, would have come across the term E-learning. A simple google search on E-learning would bring up many thousands of pages. One can find dozens of books on the topic. But a closer inspection of these materials and people's perception of the meaning of the term E-learning shows a wide range of variation. E-learning does indeed have many dimensions and approaches, with associated spheres of influence. Hence E-learning is very helpful to meet the individual academic requirements. E-learning Tools play very important role in E-learning System. In this paper we discuss about definitions of E-learning and some of the E-learning tools.

The remaining paper is organized as follows: In section 2 we discuss about the definitions of E-learning. In section 3 we focus on the need for E-learning tools and different types. Section 5 will highlight the challenges the design and implementation of E-learning. Finally in section 5, we conclude the objective of this paper.

## 2. Definitions of Online Education and E-learning:

### **'E-learning'**

The terms '*E-learning*' and '*m-Learning*' have entered the scene and are replacing the terms '*Distance education*' and '*Distance learning*'. These terms are taking the control of the teaching and learning community. Most of E-learning programmes seem to be extremely costly to develop and implement.

E-learning is defined in various ways by different researchers, teaching and learning community. Dichanz, a professor of education and the German FernUniversität, ends his critical analysis of the term, E-learning with the following definition:

*"E-learning is the collection of teaching – and information packages – in further education which is available at any time and any place and is delivered to learners electronically. They contain units of information, self-testing batteries and tests, which allow a quick self-evaluation for quick placement. E-learning offers more lower level learning goals. Higher order goals like understanding, reasoning and (moral) judging are more difficult to achieve. They require an individualised interactive discourse and can hardly be planned"*

Kaplan-Leiserson has developed an online E-learning glossary. It provides the definition as:

*E-learning covers a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio-and videotape, satellite broadcast, interactive TV, and CD-ROM.*

In the glossary of *E-learningeuropa.info*, E-learning is defined as: *"The use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration"*.

From above definitions the E-learning may be represented as:

***"An interactive and learner centred cloud learning, which includes the delivery of content via Internet, audio/video facilities. The main intention of the E-learning is to improve the learning performance of learner depending upon the learner's learning profile"***.

## 3. E-learning Tools

To create a proper course for E-learning, we need an authoring tool to facilitate this work. The definition of authoring tool is "a program that helps you write using hypertext or multimedia applications and enable you to create a final application merely by linking together objects, such as a paragraph of text, an illustration, or a song. By defining the objects' relationships to each other, and by sequencing them in an appropriate order, authors (those who use authoring tools) can produce attractive and useful graphics applications". Most authoring systems also support a scripting language for more sophisticated applications. Thus, these tools provide many facilities helping the author to create a good e-content for courses. In fact, e-content has very important features that make the work easier than paper-content which are storing,

modification, reusability and sharing of information.

### **3.1 Survey on E-learning Tools**

A Survey on E-learning Tools reveals the following conclusions and recommendations have been observed

- E-learning material should be based on learning theories. Behaviorist strategies can be used to teach the facts (what); cognitivist strategies to teach the principles and processes (how); and constructivist strategies to teach the real-life and personal applications and contextual learning.
- Should be a shift toward constructive learning, in which the opportunity is given to learners to construct their own meaning from the information presented during the online sessions. The use of learning objects to promote flexibility and reuse of online materials to meet the needs of individual learners should become common;
- Online learning materials should be designed in small coherent segments, so that they can be redesigned for different learners and different contexts.
- Learning material must account different learning styles (visual, verbal, kinesthetic). Thus it must be prepared using multimedia tools and include visual information (slides, video, animation) and audio information. The learners should have possibility to choose what mode of information they would like to use.
- VLE (Like Moodle, Web CT, BlackBoard) should provide these features: delivery and management of course content, access control, administration, time-tabling facilities, assessment, communication on various levels (one to one, one to many, synchronous and asynchronous).
- Student-centered learning activities should be encouraged.
- In order to fulfill student centeredness requirement, E-learning environment must include the courseware in the form of online demonstrations, interactive simulations or remotely controlled labs. It is desirable that courseware would have all three attributes of “good practice” courseware: primary (exposition of concepts), secondary (application of concepts to solve the task) and tertiary (dialogue and assessment).
- Community-centered learning activities should be encouraged. The novel scenario in problem based learning, where group work with changing roles (“problem owners” and “problem solvers”) could be implemented and evaluated.
- Student’s activity should be tracked and assessed. Formative assessment is preferred in E-learning environments.
- Several licensing schemes of E-learning materials exist. Creative Commons Attribution license seems to be most popular.

### **3.2 Authoring Tools Classification**

The classification of authoring tools can be based on different aspects such as:

Complexity: the tools can be classified in range from simple to advance. The tools become simple when supporting drag drop facilities, wizard ...etc. The

advanced tools are those that require programming capabilities to build a course material and needs technical competency. A long time need to be spent in creating a course - especially when there is a need for programming to create tests and quizzes or building the course from scratch.

- Fee: the tools can be classified as free and commercial.
- Purpose: the purpose of some authoring tools concentrate on creating courses.

However, there are a number of multipurpose tools which are not specialized for creating online courses but are used.

Over the years free tools are becoming more popular as an alternative to expensive commercial software, and have often been asked to recommend free tools to both individuals, e.g. academics and trainers, who wanted to produce their own materials as well as L&D departments with limited budgets.

### **3.4 Free E-learning tools**

Some E-learning tools that can be used to create and deliver informal learning or performance support solutions, or that support information and knowledge sharing in the organization are given below.

#### **i MS PowerPoint**

MS PowerPoint is presentation software used to create slideshow. The slides are usually linear and can include hyperlinks to jump to other sections. This allows the user to get to more detail on a subject of interest. In addition, it allow user to add audio and video clips in a presentation (Kurtus 2006). Even though this tool is mainly for creating presentation, it is considered to be one of the most popular course authoring tools.

Basuhail (2009) mentions that one of the reasons for using the office package for developing, implementing, and delivering E-content of a course is the easiness of use which is built over the previous expertise of using this package by almost all of the personal computer users. Another reason is that most of may be all of the PCs are equipped with this package. It widely spread which makes it common among the personal computers and the users.

#### **ii Flash**

Flash has become a popular method for adding animation and interactivity to web pages. Flash is commonly used to create animation, advertisements, and various web page Flash components, to integrate video into web pages, and more recently, to develop rich Internet applications (Wikipedia). Therefore, some course authors prefer using flash, because it allows many features and programming using Action Script. This helps them to create tests and quizzes in attractive way. However, this tool is complex and need professionals.

#### **iii FrontPage and Dreamwaver**

These tools used to create WebPages. They provide an easy way to create links and images without need to know about HTML. However, these tools alone can not

provide the interactive course. It needs the help of other tools and graphics designers.

**iv OpenOffice**

This is an open source Office suite to download and is a great alternative to MS Office. It contains word processing, presentation, spreadsheet and database software and runs on both Macs and PCs. Two important features of it are (i) we can convert word processed documents into PDFs within it, and (ii) we can convert OO presentations into Flash-based versions, which provides a much more effective way of distributing them. So a very useful tool to create job aids or presentations.

**v Slideshare**

This is a free service to host presentations (created with PowerPoint, OpenOffice Impress or Keynote). It also supports slidecasting, which means we can synchronise an audio file with a set of slides. It is also a great source of presentations that might be of use to the organisation. Users can either go to Slideshare to view a presentation or they can be embedded in the blog, web or wiki page.

**vi YouTube**

This is a free online video streaming service. It needs a device to create the video, e.g. a camcorder, digital camera or webcam and then copy the video to a computer and upload it to YouTube. It can be made “private” so that only selected people can be viewed. Then, like Slideshare, people can either view the videos directly in YouTube or can be embedded them in the web, blog or wiki page.

**vii Wink**

This is a free program to create a presentation or tutorial on how to use software. One can capture screenshots, add explanations and buttons, and even record his/her own voice to provide a narration. The output can either be in Flash format for the Web, EXE for distribution to PCs, or PDF for printable manuals.

**viii Audacity**

This is an open source cross-platform sound editor and recorder to download. One can record live audio for podcasts or convert audio into digital formats. A very useful little tool now that podcasting has become so popular.

**ix WordPress**

This is free blogging software. It is available both as a online service or as open source software to download or install on internal servers. If we opt for the online service, users can set up either public or private blogs where they can share information about their activities for others in the organisation, e.g. R&D might want to share information about products under development. L&D might use them to keep employees up to date with activities of interest. A superb tool for information sharing.

**x Nvu**

This is a free web authoring system for PCs or Macs and is comparable to programs like Dreamweaver and FrontPage. It can be used for creating basic web pages as well as managing a complete web site. You can also easily embed the different resources created with the other tools within it to make it a useful E-learning portal.

**xi PbWiki**

This is online wiki solution. Wikis are useful for users to create content collaboratively, e.g. a user manual. It works just like a word processor and one can add attachments like PowerPoint files, Word docs, PDF files, YouTube videos, and so on.

**xii Yugma**

This is a free web conferencing tool. The “lite” version allows up to 10 users to collaborate online. It is very simple to set up and we can even embed it in our website. A great way to bring people together online.

**xiii Ning**

This is a free online service to create, customise and share own social network. The network can be either public or private, so we can get people within and without our organisation connecting with one another. A very innovative way of supporting collaboration within the organisation.

**3.5 Specialized Authoring Tools**

The growing of elearning leads to create special authoring tools that help authors and fulfill the needs for creating course in easy way. The following are the most popular courses authoring tools.

**i. Articulate**

In Articulate Studio Package the most three important authoring tools are Presenter, Engage and Quiz Maker. These authoring tools are used inside MS PowerPoint. The Presenter allows adding interactivity and narration compiling to create flash presentation. In addition, it provides features to get attention and inspire learning such as:

- Animated annotations that highlight important points.
- Clear, crisp images and video.
- Multi-level navigation and branching.

The other tool is Engage that provides facilities making the learners interact with the course such as:

- Examine in greater detail each step of a process.
- Explore the relationship between timeline events through text, images and sound.
- Drill down into key elements of a diagram to better understand the main points.

Finally, Quiz Maker tool allows creating group and randomizing question pool quickly — without separating questions that should appear together. It also provides the following feature:

- Branch quiz takers to different slides depending on how they answer each question.
- Animate objects and adjust their timing on the click-and-drag timeline.
- Choose from a wide selection of professionally designed themes or create your own.
- Give your quiz takers specific results and feedback based on their scores.
- Get quiz results through e-mail.

Articulate package considered as the one of the best authoring tools in elearning. However, as you see, these tools make PowerPoint as a base and start to increase its features which make it easy for authors.

**ii. *Adobe presenter***

Adobe Presenter help to easily create professional Flash presentations and self-paced courses complete with narration and interactivity. In addition, it allows adding animations, quizzes, and software simulations to e-Learning courses (adobe 2009). Similar to articulate, this tool is also based on MS PowerPoint.

**iii. *Adobe Captivate***

Adobe Captivate can rapidly author professional e-Learning content with advanced interactivity, simulations, quizzes, and other engaging experiences — no programming or multimedia skills required (Adobe 2009). However, Captivate does not need MS PowerPoint because it is independent. In fact, it has features as which in Flash that make this tool professional.

**iv. *Course Lab***

Course Lab is a powerful, easy-to-use, e-learning authoring tool that offers programming-free and WYSIWYG environment for creating high-quality interactive e-learning content. This tool is somehow similar to captivate but it is free.

Generally, all the specialized tools mention above have the feature to:

- Publish to HTML package.
- Publish to CD-ROM.
- Publish to SCORM 1.2 and SCORM 2004 package for import to any LMS supporting this standard.

**v. *GLO Maker***

GLO Maker is an authoring tool for creating rich, interactive learning resources. It builds on the extensive experience of the Centre for Excellence in Teaching and Learning (CETL) in Reusable Learning Objects. It is open source and free for educational use.

GLO Maker authoring tool is based on the new concept. Generative Learning

Objects (GLO) approach inverts traditional approach for reusability. The traditional approach to the reuse of learning objects has been to separate content from context in order to make the content reusable. However, in GLO, It extracts successful pedagogical designs and makes these the basis for reuse (GLO Maker 2009). In this design-based approach to learning objects, the designs have to be rendered explicit in two distinct ways. The first form relates to human understanding which is pedagogical design. Then, the design should be rendered to produce learning object based on that design (Boyle 2009).

#### **4. Challenges to design and implement**

- i. Engineering professors and lecturers are very strong in their fields and disciplines, but often do not have any background or training in pedagogic theories, methods or results. They teach the way they had been taught and are unaware of the research in teaching and learning, and of the effectiveness of newer teaching methods such as active learning.  
Most engineering professors and lecturers have a clear idea of how to teach a course or deliver a lecture, but they do not necessarily think in pedagogic terms. The evidence from the project, and elsewhere, is that the students respond quickly and effectively to active learning processes, but too many teachers ignore the advantages of these methods. The project team is challenged to find better ways to impact the behavior of all the teachers, and they have demonstrated some techniques, such as team teaching, but much more needs to be done to reach the larger community of teachers.
- ii) Lack of time for preparation of active learning techniques for courses
- iii) Reluctance to reduce amount of material covered, which is perceived as necessary in order to use active learning methods or integrated learning experiences. Sequential courses depend on full amount of coverage in previous courses.
- iv) Deeply-rooted culture of traditionally-taught lecture courses
- v) Resistance to change, from faculty, and from students who expect to be taught and learn in a certain way
- vi) A perceived conflict by some faculty and students between technical content and the learning of personal, interpersonal, and product and system building skills.

#### **5. Conclusion**

Nowadays, there is a large movement from education institutions and universities for using e-learning. E-learning is very helpful to meet the individual academic requirements. E-learning Tools play very important role in E-learning System. In fact, e-content has very important features that make the work easier than paper-content which are storing, modification, reusability and sharing of information. This paper is helpful for the researcher in the area of E-learning. There is a need of major change from traditional teaching-learning system to modern e-learning system.

**References:**

- [1] Dichanz, H. 2001: E-learning, a linguistic, psychological and pedagogical analysis of a misleading term. Paper presented at the 20<sup>th</sup> ICDE World Conference in Düsseldorf 2001.
- [2] Garrison, D. R. 1993: Quality and access in distance education: theoretical considerations. In: Keegan, D. (ed.): *Theoretical Principles of Distance education*. London/New York: Routledge.
- [3] Keegan, D. 1983. Theories of distance education. In *Distance Education: International Perspectives*, eds. D. Sewart, D. Keegan, and B. Holm-berg, 63-67. London: Routledge.
- [4] Keegan, D. 2000. Seamless interfaces: from distance education to web based training. *Istruzione a distanza, 16, April 2000, pp. 7-21*.
- [5] GLO Maker, [Online].
- [6] Knowledge Bank, e-Learning for Development, [Online].
- [7] Kurtus, R. (2006). Authoring tools for elearning, CBT and WBT. [electronic version].
- [8] Webopedia: Online Computer Dictionary For Computer And Internet Terms And Definitions, [Online].
- [9] Wikipedia, Adobe Flash, [Online].
- [10] Adobe, Adobe Presenter [online].
- [11] Basuhail, A. A. (2009). Design And Implementation Of And E-Learning Content Using Simple And Obtainable Tools. First International Conference ‘e-Learning and Distance Education’. [Electronic version].
- [12] Boyle, T. (2009). Generative learning objects (GLOs): design as the basis for reuse and repurposing. First International Conference ‘e-Learning and Distance Education’. [Electronic version].
- [13] Center for Learning & Performance Technologies, Tools Directory, [online].

