

Feasibility Analysis on e-Content Development using Learning Object

Prof J.Senthil Kumar, Dr.S.K.Srivatsa, Ph.D.,

Abstract - One of the strongest arguments for promoting e-learning lies in its potential to improve and even revolutionize teaching and learning. E-learning has had a broadly positive pedagogic impact. The "learning object" model is perhaps the most prominent "revolutionary" approach to date. A learning object can be described as an electronic tool/resource that can be used, re-used and redesigned in different contexts, for different purposes and by different academic actors.

Index Terms - E-learning, learning object, pedagogic, context, reusable, electronic tool

1. INTRODUCTION

Pedagogical elements are an attempt to define structures or units of educational material. For example, this could be a lesson, an assignment, a multiple choice question, a quiz, a discussion group or a case study. These units should be format independent, so although it may be implemented in any of the following methods, pedagogical structures would not include a textbook, a web page, a video conference or an iPod video. When beginning to create eLearning content, the pedagogical approaches need to be evaluated. Simple pedagogical approaches make it easy to create content, but lacks flexibility, richness and downstream functionality. On the other hand, complex pedagogical approaches can be difficult to setup and slow to develop, though they have the potential to provide more engaging learning experiences for students. Somewhere between these extremes is an ideal pedagogy that allows a particular educator to effectively create educational materials while simultaneously providing the most engaging educational experiences for students.

2. VARIOUS PEDAGOGICAL APPROACHES FOR ECONTENT:

2.1 Instructional design - the traditional pedagogy of instruction which is curriculum focused, and is developed by a centralized educating group or a single teacher.

2.2 Social-constructivists - this pedagogy is particularly well afforded by the use of discussion forums, blogs, wiki and on-line collaborative activities. It is a collaborative approach that opens educational content creation to a wider group including the students themselves. The One Laptop Per Child Foundation attempted to use a constructivist approach in its project [1]

2.3 Laurillard's Conversational Model [2] is also particularly relevant to eLearning, and Gilly Salmon's Five-Stage Model is a pedagogical approach to the use of discussion boards [3].

2.4 Cognitive perspective focuses on the cognitive processes involved in learning as well as how the brain works.[4]

2.5 Emotional perspective focuses on the emotional aspects of learning, like motivation, engagement, fun, etc. [5]

2.6 Behavioral perspective focuses on the skills and behavioral outcomes of the learning process. Role-playing and application to on-the-job settings. [6]

2.7 Contextual perspective focuses on the environmental and social aspects which can stimulate learning. Interaction with other people, collaborative discovery and the importance of peer support as well as pressure. [7]

3. REUSABILITY, STANDARDS AND LEARNING OBJECTS

Much effort has been put into the technical reuse of electronically-based teaching materials and in particular creating or re-using Learning Objects. These are self contained units that are properly tagged with keywords, or other metadata, and often stored in an XML file format.

Reusable learning objects can provide for better management of learning content by:

- minimizing redundancy
- allowing updates to be centralized
- allowing for immediately updateable learning materials
- allowing searches for learning objects
- Online Reusable learning objects can provide for increased accessibility, being available:
 - to multiple classes of an instructor
 - throughout the entire class or longer

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- Author name is Prof J.Senthil Kumar currently pursuing Ph.D. in Computer Science in Vels University, India.
- Co-Author name is Dr. S.K.Srivatsa working as Senior Professor in St.Joseph's College of Engineering

- to different instructors' classes
- to learners with specific interests
- 24-7, globally

RLOs can provide for increased learning opportunities. They may allow for:

customized, non-linear paths through materials; and
Further levels of instruction in greater depth.

RLOs may result in savings of time, work and money.

Learning objects can be reused in different training programmes, thus a learning object on open or closed questions can be used in an interviewing course and also in an appraisal course. This creates the potential for more cost-effective e-learning through the reuse of learning objects within an e-learning library Trainers can quickly construct e-learning courses, for individuals or groups, by selecting learning objects from an existing library and reusing appropriately. E-learning programmes can contain diagnostic tools to question a learner on their knowledge and experience and then automatically compile a personalised version of the programme.

Learning objects can be used to create time specific learning programmes. For example, if a learner wants a twenty or thirty minute refresher, the programme can automatically assemble the key points for the time specified.

4. COST WISE BENEFITS OF LEARNING OBJETS

4.1 Reducing costs in learning

*Lower delivery costs-'There is very strong evidence that e-learning reduces the total cost of training when compared to instructor led training.' Brandon Hall, 1995. In practical terms, Ernst & Young experienced a 35% cut in costs by introducing e-learning (Hall 2000).[8] Similar savings were highlighted by Max Zornada in 2005 in his studies of Cisco and Motorola.

E-learning's ability to significantly reduce costs by providing more efficient delivery of learning is well documented.

This stems from:

4.2 Delivery of learning to the desktop:

This results in less downtime to travel and attend learning events, and lower travel and subsistence costs

4.3 Delivery of learning material online:

Online delivery rather than in printed form results in less printing and distribution costs and lower maintenance/updating costs.

4.4 Delivery of learning online with less tutor support

This results in lower tutor and classroom costs. For example, the conversion of a two day course to a one day

course plus e-learning for 30,000 staff, results in 3,000 fewer tutor days and fewer classroom facilities being required While e-learning can be more expensive to develop, these costs are normally outweighed by lower delivery costs. Generally, the larger the target audience the greater the benefits as the development costs can be spread over a larger number.

5. REDUCTIONS IN TRAVEL AND SUBSISTENCE COSTS

Delivery to the desktop or local PC means that there are significantly reduced travel and accommodation costs associated with training.

6. REDUCTIONS IN PRINTING AND GIVING OUT COSTS

In big organization, the printing costs alone for training materials were in excess. Now this can be drastically reduced.

7. CONCLUSION

E-learning can be updated more quickly and easily than classroom or paper based training. New regulations, for example, can be incorporated quickly into an e-learning programme and made available instantly to staff. Faster learning through e-learning also means staffs are more productive more quickly.

The objective of reducing costs through the use of e-learning is gathering more and more importance, particularly as spend on training per employee fell down to the maximum extend.

The most significant benefit from e-learning learning object is a financial benefit achieved through a reduction in training time, cost and reusable, distributable and richness in content.

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