

# Learning About e-Learning – The eUniversity Experience

Casey McQuinn Wilson

Sheffield Hallam University

[casey.wilson@shu.ac.uk](mailto:casey.wilson@shu.ac.uk)

## ABSTRACT

This paper presents the experiences to date of an 'e-learning' development project which aimed to successfully develop, deliver and support 'e-materials' for a masters level degree course in Information Technology and Management 100% online to a world wide community. The e-learning development project was established in early 2002 and is now at the stage that the majority of the e-materials have been developed and delivery of the MSc course is underway. This paper critically evaluates the e-learning development experience to date. Upon reflection and analysis of the development process preliminary lessons have been drawn and are discussed here. Through this discussion comment can be made about developing e-learning materials in Higher Education.

## Keywords

e-learning, learning environments, constructivism, etutors,

## INTRODUCTION

In recent years the government has promoted the use of Communications and Information Technology in Higher Education and looked toward e-learning as a means of promoting, within the United Kingdom, the concept of 'continuous professional development'. E-learning is viewed as the vehicle for enabling those learners with disabilities and additional learning needs, from all backgrounds access to Higher Education (HEFCE, 2000; Newland and Ringan, 2003)

In response to government initiatives promoting 'life long learning', institutes of Higher Education are evolving and looking toward developing innovative modes of delivery (HEFCE, 2003) which engage the learner and move away from 'teaching' and move towards 'learner driven' or 'participatory learning' (Hailes and Hazemi, 2002). Many universities are beginning to view online environments as the effective medium, especially when combined with good online teaching, (Jonassen and Reeves, 1996; Salter, 2001) for empowering learners and enabling them to construct rather than acquire knowledge.

As well as promoting change in learning within Higher Education, the government also aims to enable institutes of Higher Education access to and the ability to compete within the highly competitive overseas market. This aim has seen the emergence of initiatives such as the UKeUniversity worldwide (UKeU). The aim of the UKeU was to market and support high quality UK degree courses online 100% online to a worldwide community of learners. It is also claimed that the UKeU will prompt strategic change by enabling a new model of delivery to be developed and expanded into a global market (HEFCE, 2003).

The focus behind the UKeU is that the experience is 'learner driven' and this has been achieved by the UkeU, who in partnership with SUN Microsystems, have developed a flexible learning environment based on open e-learning standards (UKeU 2003). The UKeU Learning Environment is a web based system for end to end course creation, production and online learning (UKeU 2003). The Learning Environment is based on open architecture and acts as a portal for course development, production and offering. Coupled with the Learning Environment offers a range of tools and services for online learning. The concept behind the UKeU is that UK universities would develop and publish accredited learning materials through the UKeU Learning Environment. The UK universities would provide courses and a range of tutor support services while the UKeU provides the technological services and support. In addition the UKeU would market the courses and in doing so enable the UK's share of the global HE overseas market to be increased as well as making high quality, accredited courses available to learners from a diversity of backgrounds and cultures, thus ensuring 'social inclusion' (HEFCE, 2000).

This paper present the experiences to date of an e-learning development project which was set up in early 2002, when Sheffield Hallam formed a partnership with the UKeU as on of the three 'fast track pilots' to develop,

deliver and support e-materials 100% online via the UKeU Learning Environment. Upon reflection several lessons have been drawn which enable initial comment to be made about the issues of developing e-learning materials for delivery in Higher Education.

## THE E-UNIVERSITY DEVELOPMENT PROJECT

As one of the fast track pilots Sheffield Hallam University established a formal project office to oversee the development of the high quality 'e-materials' that would form the basis of the postgraduate programme in Information Technology and Management (IT&M). The project office would also ensure the successful upload of the course materials onto the Learning Environment and their availability to the learners and e-tutors. The IT&M course currently exists as a well established and proven course which is targeted at adult learners, primarily business managers and IT professionals, who wanted to bridge the gap between IT and business. The course is delivered in both Full Time and Distance Learning modes. In these modes the course consists of twelve 15 credit modules of which the student must select and successfully complete eight. The learners must also successfully complete a credit bearing induction and dissertation phase in order to achieve the award of MSc. To effectively convert and develop an e-learning version of the master's course which provided learners with a rounded and enriched learning experience the project team required the support of other areas such as registry, the learning centre and computing services. There also needed to be a strong working relationship with the postgraduate delivery team who would be supporting the learners once the programme was underway.

The e-learning development project adopted the PRINCE 2 development methodology as a means of managing the complex process of converting the existing IT&M Distance Learning modules into high quality and appropriate 'e-learning' materials. This conversion process was undertaken by the academic subject experts for each of the modules, under the close supervision and guidance of the core developers within the project team. In order to produce a well designed course, consideration needed to be given to the underlying pedagogy. The chosen pedagogy must then be reflected in the design of the technology and the e-materials.

Within the educational literature there is a general consensus that the adoption of a constructivist approach to learning is more progressive for learning opportunities (Littlejohn and Higginson, 2003), particularly when developing learning materials for adult learners (Littlejohn and Higginson, 2003). Adopting a constructivist approach to learning is not just the passive acquisition of information by the learners from the subject experts but rather an active process in which the learners use current and past knowledge in the context of their learning experience to actively construct new ideas and concepts (Duffy and Cunningham, 1996, Littlejohn and Higginson, 2003). The adoption of a constructivist framework for the development of e-learning materials is to focus more on the use of tools for the examination of thinking, debate, reflection and the accommodation of multiple viewpoints (CTGV, 1993). The learning is learner centered, participatory and within a collaborative learning environment (Jonassen and Reeves, 1996).

To design e-materials which take full advantage of the benefits of adopting a constructivist approach and enable active learning is not an easy task, but one which is made easier by the fact that the available tools and techniques of the virtual Learning Environments lend themselves well to a constructivist pedagogy. It may also be argued that an essential element of e-learning is student motivation through high expectations (Littlejohn and Higginson, 2003). One way that this may be achieved is through the use of high quality multimedia resources (Littlejohn and Higginson, 2003). For the IT&M course each module required an element of multimedia which would enrich the learner's experience. The multimedia elements were identified through collaboration between the academic authors and the development team. An external supplier was contracted to advise and develop the interactive media. However, before multimedia elements and academic content could be successfully identified and developed a clear understanding of the Learning Environment was required by the academic subject authors and the project developers.

In the e-learning development project, the Learning Environment was being developed at the same time as the project team were creating the learning materials. The structure of the Learning Environment is learner driven with a hierarchical structure. While this structure may appear to constrain the subject expert to presenting the learning materials in a linear fashion, the Learning Environment structure does in fact encourage the use of learning objects and as such the hierarchical structure may be better viewed as a conceptual map formed from the educationally coherent learning objects (SHU, 2003). The central navigation point for the conceptual map is the core document (SHU, 2003) which is an educational description of the content as shown in figure 1.

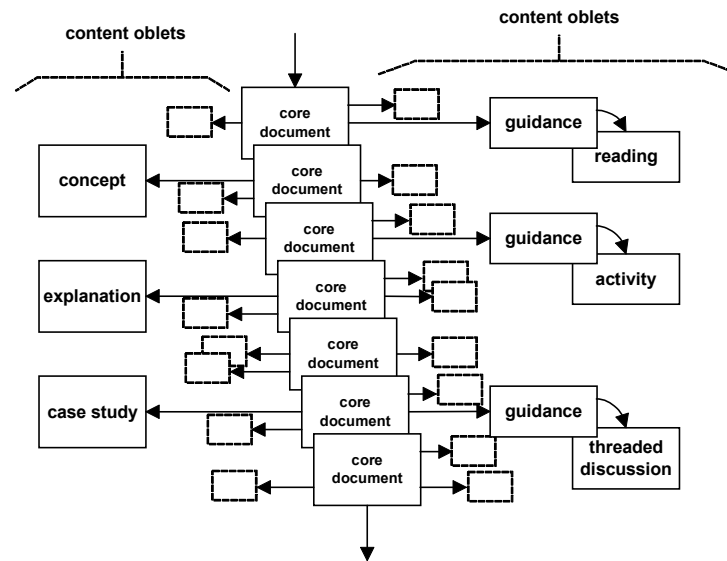


Figure 1: The Conceptual Map (SHU, 2003)

This design structure has a number of benefits, first, the concept of a learning object, where a learning object is considered to be a small educationally coherent 'chunk' (SHU, 2003). This type of design enables the academic subject author to break material down into discrete learning objects (Salter, 2001), and the learner is able to select material in a way that will make sense for them to enable knowledge construction (Salter, 2001). Second, in designing e-learning materials that enable the learner to be an active learner, consideration needs to be given to the fact that the learners many not initially have the skills required to construct knowledge, but rather that these skills must be developed. It is important when developing the materials that careful consideration is given to the level of guidance or 'scaffolding', to enable the learners to navigate through the 'learning space' (Richards, 2001). This exploration process, which is made up of multiple visits forms new experiences and enables knowledge to be built upon. The periods between visits enable a period of reflection (Richards, 2001) in which the learner develops their own personal meaning. In the design of the e-learning development project materials the core document enables the learners to orientate and navigate the learning materials using multiple routes (SHU, 2003).

In addition to separating academic guidance from the academic content of a module the academic subject authors needed to be able to understand how to relate learning outcomes to activities which will motivate and ensure the learners are able to construct knowledge (Goodyear 2001). One aspect of the development process was building into the design of the material appropriate levels of guidance for the activities, resources and the readings to enable the learner to effectively engage in the materials, so that they were able to think about, discuss and apply concepts (Littlejohn and Higginson, 2003). To complete the active learning cycle feedback needs to be incorporated into the learning design. It is through the process of completing activities and receiving high quality feedback that the learner forms a dialogue between the other learners and the e-tutor. It is through this dialogue that the learners are able to build upon their learning (Armitage and O'leary, 2003). In designing the learning materials for the UKeU Learning Environment the use of online discussions were viewed as an effective means of enabling the learner to engage within the virtual Learning Environment, as they provide an opportunity for the learner to reflect upon the learning that they were undertaking. The Learning Environment is able to allow threaded discussions to be closely linked to other areas of learning through explicit links from the learning object to a discussion about that piece of learning, and to return to it at a later time.

## E-UNIVERSITY – THE PRELIMINARY LESSONS

The primary aim of the project was to develop high quality e-learning materials for a masters programme in Information Technology and Management and to deliver and support these materials on the technological Learning Environment in such as way as to engage the learner and move away from 'teaching' and toward 'learner driven' learning. The e-learning development project is now at a stage that the masters' level materials have been developed and the delivery and support of the masters' level programme is underway. Upon reflection and analysis of the e-learning development project, three preliminary lessons have been drawn and

are presented here. Through this discussion comment can be made about developing e-learning materials in Higher Education

The first lesson relates to the role of the subject expert as an e-learning author. In a study by Oliver et al (2001) it was found that the materials developed by subject authors often had the tendency to be 'heavily text based' with a lack of learner support, and activities were focused on reading and report writing. In the initial stages of the e-learning development project similar problems were experienced by the subject authors, who found it challenging to break their content down into small and discrete 'learning objects'. Once the academic content had been written, then several reviews were often required to strengthen the level of learner support, particularly in the learning activity oblets, which often required stronger links being made between the learning outcome and the nature of the activity. The development of the core document (SHU, 2003) aided this process as it allowed a separation to be made between the educational material and the academic guidance required to study a session or unit within a module. It may be argued here, that a possible reason that the academic subject authors initially experienced difficulties in developing content for the e-learning material was because of a lack of understanding about how the role of the subject expert changes in the e-learning environment, for effective active learning to take place. A dialogue needs to take place between the learners and the facilitator, and the effect of this is that the role of the academic moves from being an information provider to someone who supports the learners, aiding the learners to becoming more self directed and autonomous (Littlejohn and Higginson, 2003). This change in role needs to be reflected in the design process, and when developing e-materials the academic subject author needs to keep in mind that they are moving away from being an information provider to becoming an expert questioner and that in turn the role of the learner is also evolving from simply memorizing information to that of being a complex problem solver (Goodyear, 2001).

Interlinked with the practicalities of developing the materials, insight has also been obtained into the role of the e-tutors, and the tutors' relationship with the learners in the virtual learning environment. The participants in the Learning Environment need to feel that they can communicate easily to one another and the tutors, this means that online learners require more support than would be explicitly given in face to face teaching as they do not have the opportunity to have any informal contact with their peers (Littlejohn and Higginson, 2003). The online tutor must manage a course, guide students through the learning experience, motivate them, create a dialogue and deal with any conflicts and difficulties (Cornelius and Higginson, 2000; Littlejohn and Higginson, 2003) and the means by which this can be successfully achieved is through activities, questioning, discussions, reflection and feedback. Feedback is an essential aspect of e-learning. To aid the feedback process the e-learning activities need to encourage reflection before communicating with other learners and the e-tutor and this can be achieved by incorporating appropriate guidelines into the activities. Through reflection and discussion the learners are being encouraged to take a deeper approach to learning. However, they do need help in achieving this. Richards (2001) has indicated that in the initial stages of an e-learning program the learners require a level of scaffolding to help them develop as learners and navigate through the e-learning materials. This scaffolding process can be aided by the e-tutors if they are upfront and explicit about when and how often they will be in contact and when they will respond. Also e-tutors need to be aware that over time the role of the learners will evolve as they become familiar with the technology and begin to embrace the concept of an e-learning community, so the level and type of support will change.

The third lesson is concerned with the potential problems of attempting to adopt a 'purist' constructivist approach as in practice the underlying technology of any Learning Environment can taint the approach and potentially restrict the learning of the learners. In this projects experience the hierarchical structure of the learning environment can give the impression that the learning materials should be accessed in a linear fashion, making it difficult to develop the appropriate materials. For example, problems were experienced when subject experts attempted to identify discrete learning oblets, as the academic needed to consider and ensure that the educational quality and validity of the content was not sacrificed at the expense of fitting the material in the learning object model.

## CONCLUSION

This paper has presented the experiences to date of e-learning development project, which aimed to successfully develop, deliver and support e-learning materials for a postgraduate course 100% online via a Learning Environment. The delivery and support of these materials has begun and upon reflection of the project experience preliminary lessons have been drawn which enable the author to begin to make comment about developing e-learning materials for delivery in Higher Education. The eUniversity project has identified that developing materials and the creation of a virtual community for learners is not an easy task, but that it is possible to develop high quality learning materials which enable learners to be actively involved with the learning experience. The next stage of this project is to take these preliminary thoughts and experiences and

relate them to the student experience by collecting and analyzing student feedback. In this way these lessons can be used to inform further e-learning developments in Higher Education.

## REFERENCES

- Armitage and O'leary, (2003), A Guide for Learning Technologists, LTSN Generic Centre - E-learning Series. Learning and Teaching Support Network.
- Cognition Technology Group at Vanderbilt (CTGV), (1993), Designing Learning Environments that Support Thinking. In J., Lowyck, D., H., Jonsssen and T., M., Duffy (Eds), Designing Environments for Constructive Learning. New York: Springer.
- Boyle, T., (2003), Developing and Delivering Learning Objects from a Practitioners Point of View. LTSN Generic Centre: Learning and Teaching Support Network.
- DfES, (2003), The Future of Higher Education. Norwich HMSO.
- Duffy, T., M., and Cunningham, D., J., (1996), Constructivism: Implications for the Design and Delivery of Instruction. In D., H., Jonassen (Ed), Handbook of Research for Educational Communications and Technology. New York: Simon and Schuster. Macmillan.
- Goodyear, P., (2001), Effective Networked Learning in Higher Education: Notes and Guidance. [online] Lancaster University. <http://csalt.lancs.ac.uk/jisc/advice.htm>
- Cornelius and Higgison, (2000), Online Tutoring e-book, Chapter 2, The Tutors Role and Effective Strategies for Online Tutoring. OTIS
- Hailes, S., and Hazemi, R., (2002), Universities, Dearing, and the Future. In R., Hazemi and S Hailes (Eds), The Digital University – Building a Learning Community. London: Springer.
- HEFCE, (2000), Business Model for the e-University  
[http://www.hefce.ac.uk/pubs/circlets/2003/cl21\\_03/cl21\\_03a.pdf](http://www.hefce.ac.uk/pubs/circlets/2003/cl21_03/cl21_03a.pdf) Last accessed 16th October 2003
- HEFCE, (2003), Consultation on HEFCE e-learning  
Strategy.[http://www.hefce.ac.uk/pubs/circlets/2003/cl21\\_03/cl21\\_03a.pdf](http://www.hefce.ac.uk/pubs/circlets/2003/cl21_03/cl21_03a.pdf) Last accessed 16th October 2003.
- Jonassen, D., H., and Reeves, T., C., (1996), Learning with Technology: Using Computers and Cognitive Tools. In D., H., Jonassen (Ed), Handbook of Research for Educational Communications and Technology. New York: Simon and Schuster. Macmillan.
- Littlejohn, A., and Higginson, C., (2003), A Guide for Teachers. LTSN Generic Centre - E-learning Series. Learning and Teaching Support Network.
- Newland, B., and Ringan, N., (2003), A Guide for Heads of Departments. LTSN Generic Centre - E-learning Series. Learning and Teaching Support Network
- Oliver, M., Bradley, C., and Boyle, T., (2001), The Distributed Development of Quality Courses for a Virtual University. ALT-J, Vol 9, No 2. pp 16-27
- Salter, G., (2001), Modelling a Constructivist Approach to Online Learning. In C., Higginson (Ed), Online Tutoring e-book, Chapter 1 Learning Online Models and Styles. May 2001, OTIS: Edinburgh.
- Sheffield Hallam University, eUniversity Project Documentation, (2003), Designing Course Materials for the eUniversity Platform: eUniversity Platform Concepts, Design and Documentation. V3 [Unpublished]
- Richards, S., L., (2001), The Interactive Syllabus: A Resource-based, Constructivist Approach to Learning. Brooklyn College: New York.
- UKeU, (2003), Quick Start Guide, For the Alternate Platform. UKeU: London