

MODELS AND METHODOLOGIES IN DISTANCE EDUCATION

ROBIN MASON*

Abstract

This paper looks at the evolution of e-learning from distance education. It outlines a simple classification of e-learning models and then considers blended learning as a separate category. Course design for e-learning includes a discussion of course planning, media use and assessment.

INTRODUCTION

E-learning is increasingly taking over from distance learning as the educational model for the 21st century. The term is applied indiscriminately to almost any learning activity which has even the most marginal connection with the Internet. In fact, e-learning is an evolutionary movement which builds on various forms of distance education. The essential features of both distance education and e-learning are:

- The core content of the course is pre-prepared, in the case of distance education, in print or, in the case of online learning, in a network of web pages which may use a range of multimedia exercises, simulations, illustrations and activities.
- Communications both with the course tutor or instructor as well as with other students take place in tutorials or one-to-one exchanges, whether online or face-to-face.
- Access to extra resources may be supplied by the course provider or made available through links to other web sites.

On the one hand, e-learning is encouraging institutions and individual teachers to explore new ways of integrating technology and resources into their existing provision, or to start from scratch with new programmes which are totally online and which extend access to a new market of lifelong learners. On

* Institute of Educational Technology, Open University, UK. (R.d.mason@open.ac.uk)

the other hand, there are many applications of e-learning which merely exploit the concept without offering real pedagogical benefits to the student.

MODELS OF ONLINE COURSES

The diversity which characterises the current experimental phase of e-learning possibilities, makes it difficult to categorise existing practice. However a very rough typology of current applications might look as follows:

Marginal uses: where the web is an additional and largely optional extra resource or means of communication, e.g. some resources provided by the tutor and the possibility of asking questions by email.

Integrated uses: where a larger percentage of the course content or activities are online e.g. most of the course is taught face-to-face or through print based distance education or even through video conference lecturers, but special web materials have been provided for one part of the course and most or all of the communication amongst students and teachers takes place online through discussions, group work, guest lectures and joint projects.

Wholly online courses: although it only makes up a fraction of the educational uses of the web, this is what the term e-learning means to most people, i.e. where all of the course content and all of the communication, support and tutoring take place online.

When considering the range of uses of the web, there is one factor paramount in determining quality and in predicting success: fitness for purpose, or appropriateness. What works well with adults wanting continuing professional development, will not suit disaffected 18 year olds who would rather party than learn! What is appropriate for remote students who have no access to full-time computer based teaching, may not be appropriate for urban students who have the choice of many different educational providers. In education, one size does not fit all!

'Know thy students', might be the watchword for the virtual environment. Some practitioners are beginning to experiment with different 'views' on the course material or different routes through it, in an attempt to cater for the range of different learning styles, different educational starting points or different student contexts. Technology mediated delivery facilitates these attempts to personalise the virtual learning environment to a much greater extent even than face-to-face teaching.

BLENDED LEARNING

An increasingly common set of applications which do not fit this typology very well are those courses which alternate periods of residential face-to-face teaching with

periods of totally online learning. This model – which appears to the standard now in higher education in the West – is called blended learning. The sceptic’s view of this ‘model’ is summed up by Schank as a simple mixing of face-to-face and online elements:

Blended learning seems to mean, if I understand it right, that there will be some e-learning and some classroom learning. It is in vogue for a simple reason. No one wants to spend that much on e-learning and people in general want to preserve what they have, so they have made up this nice name for not changing much and called it blended learning. (Schank, 2001)

A more expansive view of e-learning is provided by Donald Clark, CEO of Epic Group:

We must look beyond the boundaries of traditional training, and beyond the boundaries of the course. Certainly this will take us into performance support and knowledge management, but we must go further, blending e-learning into corporate communications, workplace learning, marketing, recruitment, customer learning, searches on the web and the real world. This expansive view of learning delivery offers lots of scope for exciting new approaches to blended learning. Ultimately we must blend formal and informal learning by breaking down the artificial barriers created between, for example, learning and knowledge management. (Clark, 2003)

Of course instructional design is all about blending – different media and methods to appeal to different learners and to adapt the learning to the context. In that sense, blended learning is not new. However, instructional designers are increasingly realising the need for models of optimal blends when mixing online and face-to-face teaching. For example, when students can easily meet face-to-face on campus, it is often difficult to have successful online discussions. In cases where only one face-to-face get-together is possible, the question arises as to whether this is best held at the beginning of the course (so that everyone can meet and start the course on a good footing), or in the middle (to optimise the value of face-to-face for real discussion and in-depth analysis of course issues), or at the end (to consolidate learning and prepare students for the final assessment). More significantly, research is needed on what aspects of learning are best carried out face-to-face and what is best suited for the online environment.

LESSONS FROM DISTANCE EDUCATION

For courses that are wholly online, there are many lessons which can be learned from the practice of print-based distance education over the last twenty or thirty years.

Students need more motivation and must be self initiating in their learning. By comparison with traditional university 18-22 year old students, most adults studying at a distance are more motivated – they usually are more focussed about what they expect from the course and they may see qualifications as a route to promotion or job change.

Distance learning is isolating and it is harder for the tutor to gauge the attitude of the learner and to engage the disaffected learner. Communication is the key to overcoming these difficulties, and electronic messaging is a partial though not complete substitute for face to face meeting.

Time, and particularly the lack of it, is the main limitation for most distance learners, who are generally fitting their studies in and around a range of other job and family responsibilities. It is important to design courses which are flexible in the way students can access and study them, and give clear and efficient routes for the busy student to study effectively.

Even blended learning design has much to learn from distance education practice. For example, face-to-face contact time has been better exploited by distance educators than campus-based education, which squanders contact by ‘over-lecturing’ rather than in interactive communication. Furthermore, print-based distance education has developed highly skilled procedures for explaining and organising information to promote learning, and much, though not all of this, is relevant to online teaching.

LESSONS FROM SMALL GROUP TEACHING

What has been so critical to the phenomenal take up of the web in education, is the way in which it combines the flexibility and access benefits of distance education, with the interactive and collaborative possibilities of small group face-to-face teaching. Before the web was developed, online interactivity through computer conferencing had already received much attention from educators (Harasim et al., 1995; Mason & Kaye 1989; Berge and Collins, 1995). Compared with face-to-face interaction, online interaction is usually asynchronous and hence adds the benefit of being more reflective. While it lacks the stimulation of the face-to-face context, and the immediacy of feedback of synchronous communication, it does create a record of the interactions in a series of messages which can be re-read and even quoted in assignments (Mason, 1998).

Collaborative work in small groups has a long tradition in face-to-face teaching. Transferring it to the online environment brings benefits and disadvantages. First of all, many students resist collaborating with their peers, especially distance education students who are used to learning very independently.

Second, it is awkward to reach closure in the asynchronous online environment unless a strong group leader works to co-ordinate the group. Despite the difficulties, there are many benefits for students in learning from their peers, in overcoming isolation and in expressing their ideas to their colleagues.

The advantages of online community building have been outlined by Brown:

Community-building should be emphasized not just for the sense of togetherness it provides students, but also to help keep the students in the class and in the program, to promote full engagement in the class, to facilitate effective collaborative learning, and to encourage continued communication after the course or program is complete for development and career services purposes. (Brown, 2001, p. 34)

COURSE DESIGN FOR E-LEARNING

Some of the principles which have been refined for print based education are applicable to web based course content. E-learning material should:

- set aims and objectives so that the learner understands what is expected
- engage the students interactively with the material through offering self assessment questions, ‘pauses’ for reflection, short activities to apply what has been learned
- use an informal, conversational language to engage the reader in a learning dialogue.

Where the web differs substantially from printed course material is in the multiplicity of navigation routes offered by hypertext. This can be an advantage in encouraging students to follow their interests, to concentrate on what they don’t already know and to see the natural interrelationships between ideas or concepts. It can also be confusing, superficial and lacking in coherent analysis.

The screen based nature of virtual learning has led many course designers to limit web pages to one or two screens and to break up the text with lists, subheadings and short paragraphs. While this makes the paper more readable and the information easy to access, many educators see the ultimate impact as the trivialisation of learning. At my own institution, the UK Open University (UKOU), we are very wary of this ‘bullet point’ approach to course content or on the contrary of transferring large amounts of text from print to the web. Print is more flexible for virtual learners and if the student prints out large amounts of web course material, we might as well send it to them as print in the first place. Of course this situation needs to be kept under constant review, as home printers improve, as students’ ability to take in large amounts of information from a screen increases, and as other technologies develop e.g. higher bandwidth networks to the home or CD-ROM integration with the web.

Support software for creating web material and even multimedia web material has improved considerably and is easily within the competence of non-IT specialists to use. However, what works for one-off courses using the ‘lone-ranger’ approach, does not scale up to multiple courses or programs offered by an institution. A team approach is

essential to producing high quality courses for significant numbers of students. Graphical design for the web is a specialised skill and maintaining the links, supporting students' technical queries and managing registration and other administrative details are all more than the single lecturer can manage on any scale for a prolonged period.

PLANNING AN E-LEARNING COURSE

Preparing to develop an e-learning course is very similar to preparation for a print-based distance taught course. An outline description for authorisation to develop the course would include the following:

- aims and objectives of the course
- detailed description of each unit/section of the course, explaining how these will meet the aims and objectives
- explanation of the assessment process for the course, also showing how these will test the aims of the course
- description of the resources to be used e.g. library or online resources, set texts, media used (real time events, audio or video inputs, CD-ROMs)
- outline of the tutor/instructor support – through what means (e.g. through asynchronous conferencing, online office hours), how much time allocated by tutors for interacting with students, what kind of support (leading tutorials, running online activities, pastoral support)
- design of (online) activities – description of how students will engage with the course content
- use of technology: minimum spec for student machines, software requirements.

In short, all these elements need to fit together to make a coherent 'story' about how this course is going to work.

This process is common in a distance teaching organisation. At the UKOU, we have a very lengthy template to complete before we are given approval to develop a new course. This is probably rare in a campus university, but online education is in many respects more like distance teaching than it is like campus teaching.

USING SYNCHRONOUS AND ASYNCHRONOUS COMMUNICATION

The combination of synchronous and asynchronous elements in a course is becoming the preferred option on many e-learning and blended programmes. While the synchronous events may be face-to-face, it is increasingly possible to provide these online. Of course text-based chat has been available in real time for well over ten years, but most educational uses of it have tended to be more towards the social and organisational than the truly pedagogical. With streaming technologies, it is now possible

to offer audio and video in one-to-many mode with text back from the students. This opens the way for guest lecturers and other real time events, such as a Virtual Graduation ceremony (<http://kmi.open.ac.uk/projects/vdc>). Multiway audio with shared screen is also possible using ordinary telephones and this has even more potential for student-initiated interactions, self help groups, real time tutorials and so on.

The value of synchronous interaction in online courses can be summed up as follows:

1. Synchronous interaction improves students' motivation to keep up with their peers and to pace their work. Hence it helps maintain retention rates which are notoriously low in distance education.
2. Synchronous events help course designers develop stimulating, varied and challenging learning opportunities with instant feedback, support for collaborative activities and guest inputs.
3. The telepresence provided by real-time interaction develops group cohesion and a sense of online community.
4. Some curriculum areas are difficult to teach without them e.g. languages, mathematics.
5. Students are used to synchronous interaction – because of their use of mobile phones and Instant Messaging.

The value of asynchronous interaction is well known to distance educators:

1. Asynchronous access to course content and support affords much greater flexibility to students who can then combine study with employment, child care and many other activities.
2. Asynchronous interaction with the tutor and other students is more reflective and allows students and tutors time to consider their replies and not respond 'off the cuff'.
3. Students have more opportunities when course content is on the web or in print, to study at their own pace and in their own way.

It is possible with good course design to combine the advantages of both these forms of learning. For example, the course that I have been developing with colleagues in the Institute of Educational Technology, is totally online and has students all around the world. The content is all on the web, and most of the communication is through a text-based asynchronous conferencing system. However, we have provided various modes of synchronous interaction in each block of the course: Instant Messaging, Webcasting and a system of shared screen, multi-way audio. (Weller, Pegler & Mason, 2003)

ONLINE ASSESSMENT

Networked technologies are changing the nature of higher education, both for campus and distance learners, not only in the methods of delivery, but also in the content and skills being taught. However, on the whole, assessment strategies have not kept pace with the changes – both positive and negative – that online learning is precipitating. In order for the benefits of these changes to be fully realised in improved learning outcomes, it is essential that assessment be rethought for the new environment that communication technology has helped to create.

While many educators are convinced of the potential benefits of the online environment, it would be unwise to ignore the new problems created by the ease of access to vast amounts of electronic data. In relation to assessment, one of these problems is plagiarism which has taken on new forms and is undermining traditional coping strategies. Another issue arises with the spread of global education which communication technology encourages: ‘how do you know that the student who carries out an online assignment is the student whom you eventually accredit?’

It is not a coincidence that the dominant pedagogy (in the West at least), centres on the value of interactivity, of collaborative learning, and of active engagement with the learning material. All these values are strongly supported in the online environment by the multimedia and communication potential of the web. However, most traditional forms of assessment (individual essays, multiple choice questions and invigilated exams) are not very appropriate for testing the skills and learning outcomes which online courses are promoting. Consequently students are reporting a mismatch between the values of the course pedagogy and the demands of the assessment.

The web has spawned a whole new generation of multiple choice testing software which offers benefits to academics teaching larger and larger classes in the form of relief from the burden of marking and to students in terms of greater opportunity for feedback. At the other end of the assessment spectrum, the resource and communications potential of the web has facilitated a whole range of collaborative, interactive and student-centred forms of assessment which offer real learning opportunities for students.

It has been argued (Boud, 2000) that traditional assessment fails to provide opportunities for students to learn the very thing they most need to know: how to assess their own learning. One of the aims of higher education must surely be to prepare students for an increasingly unknowable future. Undergraduates and lifelong learners alike are increasingly realising that they must take responsibility for remaining employable. There is a need for programmes in which students reach not just immediate course-related goals but much wider learning and self-development goals.

Existing assessment practices frequently dis-empower learners and put the control and the judgement of learning in the hands of the assessors and tutors. For a learning society, it is the individual student who needs to develop the skills to assess their own and others’ materials, to make judgements about quality and value, to give and receive

feedback. One of the most significant tasks of the tutor is to help students develop these lifelong learning skills.

However, the trap in all assessment activities is to fragment and compartmentalise knowledge and understanding for the sake of having a manageable process which fits the time and process constraints of common assessment methods. As a result, many existing assessment practices have effects which actually contradict lifelong learning outcomes.

If developing lifelong learners is a core objective of higher education, the assessment processes need to be re-thought and re-positioned at the heart of the learning environment.

Examples of a lifelong learning approach to assessment include the following:

- feedback loops in which students have the opportunity to apply the results of tutor feedback on their assignments to show improved performance
- group assignments in which students have opportunities to develop team working skills
- opportunities for students to engage in the construction and reconstruction of criteria for judging work
- practice in discernment to identify critical aspects of problems and issues
- opportunities to comment on other students' work as well as to assess their own work.

There are a number of hurdles to overcome in re-positioning assessment at the forefront of the course design process. One of these is the conservative attitude (and current workload) of instructors. The other is institutional policies, standards and practicalities in managing and resourcing assessment processes.

Angelo (1999) focuses on the need for a culture change amongst academics, course designers and students – to value self-examination, reflection and continuous improvement. It is commonly acknowledged that most academics receive little reward or compensation for devoting extra time to the design and development of online courses. Likewise, strategic learners will often avoid a course which has a reputation for being hard work. These factors make the re-thinking of assessment a challenging undertaking.

Assessment practices on virtual courses are on the whole much more innovative than in face-to-face teaching. Multiple choice assignments have become more sophisticated, challenging and multimedia on the web, although they are obviously more demanding and time consuming to produce. Other online assignments can be collaborative, peer-marked, or presented electronically to the other students; they can be based around online activities, debates or discussion, and they can be marked and then accessible to other students to read. In short, ICT supports assessment which is more demanding, more representative of the skills which the course is developing and more integrated with course content. McConnell's research confirms this:

Collaborative review and assessment help students move away from dependence on lecturers as the only or major source of judgement about the quality of learning to a more autonomous and independent situation where each individual develops the experience, know-how and skill to assess their own learning. It is likely that this skill can be transferred to other lifelong learning situations and contexts. Equipping learners with such skills should be a key aspect of the so-called 'learning society'. (McConnell, 2002, p. 89)

QUALITY ASSURANCE FOR VIRTUAL LEARNING

E-learning is in the 'cowboy' stage reminiscent of the Wild West pioneering days. Some outstanding courses are available, developed by the early adopters who are trying new ideas, refining their practice and usually putting in many hours of unpaid time for the rewards of innovating and interacting with students in new ways. Less scrupulous and less dedicated practitioners have also jumped aboard what they see as a quick route to capitalising on a new market opportunity. The rest are somewhere in between wondering what the standards are or should be for establishing or recognising quality in this new environment.

Here are some of the parameters that have emerged from UKOU practice in this field:

- support systems need to be in place helping students with technical queries
- quality control procedures for checking web content for internal consistency and for maintaining the links to external web-sites
- workload for both students and tutors needs to be carefully gauged at the outset and monitored regularly throughout the life of the course – it is very easy to overload students and this leads to superficial learning; it is also easy to overload tutors by expecting too much online interaction from them
- monitoring procedures for tutors should be in place so that students receive consistent support and fair marking of their assignments; complaints from students must be followed up and systems devised for handling poor performance
- web content should be assessed for performance against the aims and objectives set by the course designers. Can the learner reasonably be expected to achieve what is stated with the materials provided?

CONCLUSIONS

This paper has so far assumed that there is a pedagogy for e-learning. In fact my own conclusion is that it is hardly distinct from the pedagogy for any kind of learning. Good teachers are the *sine qua non* online, just as they are in any environment. Good course design is perhaps more critical in the virtual environment, or at least it is more

difficult to hide poor design or mediocre content. Students may need more support in the initial weeks of an online course, but in my experience the rewards of teaching in this environment are very great. Similarly, the fundamental methodologies of online learning, derived from distance education, are based on the enduring learning principles of:

- good instructional design
- quality teaching and support of students
- fitness for purpose in the assessment and the blend of online and face-to-face elements.

The models of e-learning courses are evolving and converging with face-to-face teaching. Even the term, e-learning, may soon be redundant.

BIBLIOGRAFIA

- ANGELO, T. (1999), "Doing assessment as if learning matters most", *AAHE Bulletin*, May 1999, Retrieved July 16, 2002 from <http://www.aahebulletin.com/public/archive/angelomay99.asp>
- BERGE, Z. and COLLINS, M. (eds.) (1995), *Computer Mediated Communication*, Vol I, II and III. New Jersey: Hampton Press Inc..
- BOUD, D. (1981), *Developing Student Autonomy in Learning* (2nd edition). London: Kogan Page.
- BROWN, R. (2001), "The Process of Community-Building in Distance Learning Classes", *JALN*, 5(2), 18-35
- CLARK, D. (2003), *Blended Learning, Epic Group White Paper*, Available at: http://www.epic.co.uk/news_features/white_papers/blended.htm
- HARASIM, L., HILTZ, R., TELES, L. and TUROFF, M. (1995), *Learning Networks*, Cambridge: MIT Press..
- MASON, R. (1998), *Globalising Education. Trends and Applications*, London: Routledge.
- MASON, R. and KAYE, A. R. (eds.) (1989), *Mindweave: Communication, Computers and Distance Education*, Oxford: Pergamon.
- MCCONNELL, D (2002), "The Experience of Collaborative Assessment in e-Learning", *Studies in Continuing Education*, 24(1) pp 73-92.
- SCHANK, R (2001), *Ask the Author*, Available at: <http://www2.cio.com/ask%5Cauthor/2001/questions/question232.html>
- WELLER, M., Pegler, C and Mason, R (2003), *The use of Learning Objects*, Paper presented at E-Learn International, Edinburgh, Feb, 2003. Available at: http://www.elearninternational.co.uk/ref_papers.asp