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WHAT IS NEEDED FOR GLOBAL E-LEARNING
PATRICK MCANDREW

WHAT IS NEEDED FOR GLOBAL E-LEARNING

1. INTRODUCTION

This chapter examines the nature of emergent trends in methods being used to develop and deliver e-learning programmes by higher educational institutions for a global market. As a starting point global e-learning programmes that have been involved in large scale failure for economic reasons are analysed and the reasons behind their lack of success discussed. An account of the design approaches that are currently helping produce more flexible online courses and ways in which these can be shared among practitioners is provided in order to throw light on the advantages and disadvantages of these approaches. The model used by the Open University in the United Kingdom for distance education in the global arena is also considered in some detail particularly in relation to the insights it offers about dealing with cultural bias in global e-learning programmes. Comparison of approaches to providing online courses that draw on learning objects, learning design, and learning patterns is made and the chapter concludes with reflections on lessons learned and advice that could be

offered to those considering the provision of online courses for a global audience.

2. OPERATING GLOBALLY

The internet offers us the ability to reach anyone in the world connected to it and thus it is easy to envisage global courses where the education provider in one part of the world offers courses without being restricted by their location. These opportunities for operating globally through the internet have been apparent for several years and in the period 2000-2001 the education sector was a participant in the dot.com explosion (Howcroft, 2001). Large investments were made in online-only education providers that planned to operate globally to satisfy requirements for learning more cheaply, more quickly, more flexibly and more efficiently than existing higher education. Market estimates were high and the aim was to make larger profits while also providing access to 'the best education in the world'. Those involved were a combination of government backed initiatives, businesses, entrepreneurs and established traditional universities. At the same time many smaller initiatives also aimed to extend their provisions to the world through opening up access and adjusting requirements and methods. These smaller initiatives have met with mixed successes as have the larger initiatives. But it is the large scale failures that are of particular interest here as they act as a warning and throw light on how and why ambitions can remain unfulfilled.

2.1 E-learning failures

The changing nature of internet business in the early 21st century means that it is not difficult to find examples of economic failure in online operations. This seems particularly true for education. Examples of scaled back ambitions include *UNext* (<http://www.unext.com>) and Fathom Knowledge Network Inc. (<http://www.fathom.com>), while the UKeUniversity (UKeU) has now been wound up as a commercial entity.

The UK Commons report on the UKeU (House of Commons, 2005) identified the main failure as marketing. In particular the UKeU had taken a supplier view of what was needed rather than a customer led position, or as the report stated ‘... UKeU failed largely because it took a supply-driven, rather than demand-led approach’. This was undoubtedly true in terms of selecting provisions across a range of universities without commissioning subjects or parts of the curriculum where there were established markets, e.g. business and technology at Masters level. However there is other evidence that there are more subtle contributors to the failure. Analysis supported by the e-Learning Research Centre at Southampton University (Conole, Carusi and De Laat, 2005) and by Jonathan Darby, former Chief Architect at the UKeU suggests that many of the component courses that were part of the UKeU are now successfully being offered within their originating institutions, so it was not a failure of individual courses or a lack of market need for those courses in isolation, but rather a failure of the UkeU as an institution or entity. The position of an

‘eUniversity’ presented by the UKeU was that it could bring benefit for all; however the benefit of e-learning has only been demonstrated in particular cases and the universal benefit has not been apparent (Parr, 2004). By 2004 the market was aware of this and consequently was wary of e-learning as a solution for education. In attempting to establish a large organisation with new technology and short timescales the Commons report commented that the ‘UKeU set itself an impossibly ambitious business model’. That the UKeU failed at a cost of over £60 million does not mean that all such ventures are bound to fail. It does though suggest that more gradual change — both in making the move to e-learning and in moving into the global market — would avoid many of the problems that were encountered.

2.2 Cultural assumptions

The first wave of global providers used the internet as a conduit that enabled the delivery of a particular sort of education. *UNext* claimed to ‘collaborate[s] with some of the world’s leading universities to bring you the best in online graduate business education through Cardean University’; Fathom Knowledge Network Inc. was established ‘with the goal of providing high quality educational resources to a global audience through the Internet’; while the UKeU adopted the slogan ‘delivering the best of UK education online’. These slogans imply an assumption that global needs can be met by exporting approaches that have worked in one culture to be used and accepted in another. This view can be supported in terms of existing

practices in education where established university systems such as those in Australia, the US and UK attract students from other countries to study for existing qualifications. However, the internet does not require students to relocate and base themselves in the other culture physically and so the transfer of education in isolation continues to be impacted on by local aspects. At the same time the internet and communications technology is causing change to happen in many cultures and may offer an opportunity for those education providers who can match their offerings and approach to this new culture. Initiatives of this kind that involve mutual exchange and benefits have some chance of success.

The difficulties involved in making a commercial success of global education raises the question as to why providers should consider extending their courses globally. A possible answer is that world needs are not just economic. In Africa, for example, the AIDS/HIV epidemic has caused imbalance in the infrastructure at many levels, including in education. Attempting to re-establish such infrastructure suggests that if new ways to meet local needs from a distance can be found, then it may be possible to offer assistance. The Open University is, for example, committed to partnerships in line with the United Nations' Millennium Development Goals (<http://www.developmentgoals.org>). Through projects such *The Ferguson Fund for Africa* (http://www.open.ac.uk/developmentoffice/p2_1.shtml) the Open

University has plans to make a contribution to Africa that is sustainable and mutually beneficial and enriching. Their aim is to use this fund to help bring about universal primary education and to support a global partnership for development. The *Teacher Education in Sub Saharan Africa* (TESSA) Project is an early step in this initiative that is drawing extensively on a variety of media including ICT to build a new program for primary teachers. The challenge of finding ways to meet the current needs of African societies requires innovative solutions and using technology in new and different ways has its part to play in building new capacity.

3. APPROACHES TO ONLINE LEARNING

3.1 E-learning, blended learning and mobile learning

E-Learning has emerged as a dominant term to describe using computers and networks to help people learn. It has been defined in broad terms by the UK government's 'e-strategy' (DfES, 2005) as 'using ICT to change how we learn'. This definition allows for cases where people work in isolation with computers and technology such as CD-ROMs or work collaboratively online. In practice, however, much of the popularity of the term is linked to the internet as a way to connect students, teachers and the organisations that provide learning. E-learning therefore sits alongside e-commerce, e-government and e-business as a way of describing new modes of operating online. The promise of e-learning is that it can change the way we understand learning and offer new opportunities both to those who identify

themselves as learners and for learning as it occurs in our everyday lives. Livingstone (1999) in his survey of Canadian workers revealed that for many people there are day to day activities where they will learn new information in an informal way, and that there need to be new methods found to support this activity.

Many institutions that previously considered moving to online learning are now taking the realistic view that a blend of online and face-to-face teaching is more likely to succeed. As Parr (2004) points out computer-assisted learning has been shown to be less effective, on average, than other forms of intervention in education. The idea behind the move to blended learning is that it allows flexibility between the different modes of learning so that no one approach is rigidly followed, and the needs of different learners are more likely to be better met. Learners are offered the best of both worlds as it were. This has been found to be the case particularly when the teaching and learning model for a course is re-conceptualised, rather than simply adapted from other classroom models (see, for example, Alonzo et al., 2005).

Mobile technologies, or technologies that people carry with them (for example, PDAs, tablet computers, mobile phones, digital cameras), provide another avenue for the delivery of learning. As people themselves are mobile, as well as carrying devices they also find additional ways to interact electronically with the world – for example, using museum information systems, library catalogues, other organisations' devices and other peoples' personal devices. This

notion is emphasised in the MOBIlearn project (<http://www.mobilearn.org/>) where learning is conceptualised as ‘Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies.’ The idea of mobile learning that is adopted therefore needs to be broader than that of simply channelling information through a single mobile device (which inevitably will involve certain compromises as a consequence of the need to be small and portable. Rather mobile learning needs to be thought about as involving the use of contextual information about location, activity and interest that can offer a basis for supporting further learning relevant to the user provided through more appropriate channels.

As we think through the use of these teaching approaches it is important to consider how these new technologies can lead to a rethinking about how learning that can be supported, particularly in relation to finding new solutions that cross existing national divides. The digital adopters are a special category in each society and it is possible that there is a commonality between those who operate internationally through the internet that can be used to overcome some of the traditional international barriers that have hindered global learning projects.

3.2 The Open Approach

In software engineering open source sharing of code has shown itself to be a robust and successful approach to disseminating and developing software. In education there is now evidence of success in following the open source model to provide open access to course materials. Most notably this has been adopted by MIT to provide free access to its course material under the open courseware initiative (<http://ocw.mit.edu/>). By doing this MIT has shown that the value of provided education does not rest in the content alone: that having access to course materials is not the same as enrolling in an MIT course. Indeed for some courses the material aspect can be very limited. Nevertheless open access to these materials has enabled examples of transfer of courses across the globe in cases where teachers have adopted the MIT courses as a basis for their own teaching. Examples from the MIT website of those making use of this OpenCourseWare include educators in Malaysia, Indonesia and Cuba. The African Virtual University (AVU) (<http://ww.avu.org/>) was set up 'to build capacity and support economic development by leveraging the power of modern telecommunications technology to provide world-class quality education and training programs to students and professionals in Africa.' It has operations in 19 African countries and seeks to link with other universities worldwide. One of these links has been with MIT to provide a range of computing and engineering courses. However the analysis emerging from this experience is that the re-use of courses is not sufficient as a model for the AVU; it needs

to develop its own versions of online courses and to build the skills to support and adapt these rather than simply re-use those developed by others.

The Open University is reviewing its own approach to distributing material. Within the Open University it is recognised that sections of its material are used within other universities as a common practice. It is also currently possible to buy more or less any set of course materials by bidding for them on eBay. Though this use is not legitimate, it is unlikely to be harmful to the business of the Open University if students of other universities use some of its materials while enrolled on other courses; having the materials is not the same as taking the course. The move from tolerating some re-use to making Open University materials available under an open courseware model or creative commons licence may also cause no harm to the Open University but the risk is higher than it was for MIT. The Open University's material is designed for self-study but in a supported way, and it is possible that some alternative low-cost provider could provide and sell that support to go with the freely available materials. As a public service organisation with aims that include seeking to promote global citizenship the benefits need to be weighed against these risks. Such issues are currently being considered and it seems likely that at least some courses will operate in a more open way. The first such courses are now being made available with interesting early results: one course with insufficient interest to be retained has had

over 500 registrations for the freely available and unsupported version.

3.3 The Open University as a model for global learning

The Open University has an overall model for distance education, termed Supported Open Learning (SOL) that is adapting to the way the Open University acts as it operates as a supplier of online courses. While The Open University is now very much working online the majority of its courses continue to be predominantly for its home audience or offered in partnership for specific initiatives (such as the ArabOU or the Hong Kong Institute). There are important exceptions to this, in particular the MA in Online and Distance Education which is offered globally and is organised through online provision of integrating material and tuition. Table 1 below summarises the changes that are happening in the Open University as it shifts from producing 'traditional' distance education towards using e-learning delivery of courses.

Table 1: Emerging differences between traditional and e-learning courses delivered at the Open University

Traditional Open University courses	E-learning Open University courses
Expensively produced courses: lead time of up to 3 years and specialist production of course material	Variable costs: some rapidly produced courses with simplified designs but also can be additional costs in presenting the course and customising online environments.
Good course life: the target life for courses was 8 years with minor updating.	Annual updates/changes: learners expect revised versions and the technology encourages change.
Well-founded design: models for courses were defined in establishing the Open University and form the basis for many of the courses.	Experimental designs: more individual courses and variation across the Open University, sometimes with unexpected strains for staff and students.
Well-supported: the established tutor model offers direct comment and available support throughout the course; a tutor is likely to know all their students.	Well-supported, but with variation: the same model for support is used in many cases with conferencing and email replacing post and telephone; however courses are trying to control presentation costs by changing the student:tutor ratio.
Well-regarded for teaching quality: for example based on analysis of government quality assessment the Open University was ranked 5 th for teaching (Times Online, 2004).	Well-regarded, but print usually scores best: typically online courses have similar ratings to other courses for overall satisfaction but the most highly rated media are usually printed guides produced specifically for a course (Kirkwood, 2003).
Equality of experiences: materials provided by the Open University were meant to be sufficient for the course, everything that was needed came in the box of materials. http://www.open.ac.uk/johndanielspeeches/chea.htm	Need to accept different experiences: designing online means that learners are expected to use resources to help them carry out the activities, and the large and changing nature of the internet means learners will use different resources some of which may not have existed at the time of design.

There is a move from an established and effective system towards one where there is more uncertainty and risk, as well as potential advantages. The option to 'do nothing' and avoid e-learning is not viable for the Open University as the student body has changing expectations. A strategy of gradual change has been adopted to retain a mix of different media rather than seeking a completely online solution as a virtual university. This more gradual approach parallels the adoption of blended learning in campus-based universities.

3.4 Supported Open Learning

In Supported Open Learning at the Open University in the UK a centralised course team is responsible for producing the course materials and an overall design for the student's learning experience. The design is often described within a 'course guide' that explains to the student how they could study the course accompanied by a timetable that sets out expected progress. The student body is usually organized in groups of approximately 20 students assigned to an Associate Lecturer as their tutor. The tutor's role is to support the students through remote contact and in face to face tutorial meetings, and to give detailed feedback on their submitted work. This model has proved to be very successful in enabling students to study with the Open University and to allow variation in how students and tutors operate. However, while this approach still applies as a general description there are now many variations in the support model especially as applied in e-learning. For example, there are now cases

where the course guide and material supplied to the students has been reduced so that the emphasis is on working collaboratively in groups guided by their tutors, either using activities designed by the course team or related activities designed by the tutors. Conversely on some courses tutor involvement has been reduced with the online activities providing the primary guidance while tutors provide backup support with responsibility for 200 students rather than 20.

3.5 An Open University global course

The MA in Online and Distance Education is a qualification consisting of independent courses that are produced in the Institute of Educational Technology. It attracts relatively low numbers of students, particularly in the context of the Open University. This smaller student cohort has provided an opportunity for the course to operate more flexibly and to be used as a platform for innovation. For example one of the courses in the MA, 'Applications of Information Technology in Open and Distance Education' (<http://iet.open.ac.uk/courses/>), is aimed at graduate professionals working in education or training and attracts around 60 students a year from all over the world. The course was developed by a small team of five academics who all had experience of designing and tutoring online courses. Members of the team had been involved in the design and evaluation of Open University undergraduate courses that had used computer conferencing and were particularly aware of the strengths and weaknesses of the online medium. The course is

accessed through a website and is primarily online – that is, the learning activities and resources are accessed on the site, and students communicate through the conferencing system and work in small, collaborative groups. There are also set books, video and audio on CD-ROM, a CD-ROM of multimedia extracts, software, and access to journal articles. The assessments are submitted online and returned to students electronically.

The approach for the course is built around tasks. This enables a relatively robust approach as learners will adjust the way they perform the tasks to match with the groups they are in and the resources that are available. This means that there is uncertainty as to what will happen but also flexibility in the course for the students. The tasks are in many cases collaborative with the aim of building up a community among the learners. This is an effective approach with high completion and satisfaction ratings. When the principles of the course were analysed by tutors and course team members (Ross et al., 2004) it was found that the task-based approach had made considerable impact as it had given learners greater ownership and group involvement and the opportunity to create their own paths to meet the requirements of the course. They noted that this approach meant that tutors had to be very flexible and allow space for what might happen as student activities would vary each time the course was run (for example, learners could draw on resources not known to the tutor, or that may not have existed when the task was written). At the same time it was recognised that supporting what is expected to happen

rather than attempting to force things to happen by exerting too much control was a necessary guideline for tutors. This holding back by tutors is not necessarily appreciated by learners who often remain unaware of how tutors are in fact supporting them.

3.5 Global issues

The MA at the Open University is global in that people in all countries can register and take part in the course. Its tutors are also distributed at various locations though not as widely as students, and its model of using online integration means that no face to face meetings are needed and electronic submission ensures that assessment deadlines are fair. However the course is only offered in English, the producers of the course are all based within the British Open University and while they have a diversity of backgrounds, they essentially operate with a curriculum and pedagogic basis that is founded on UK values. Just as this chapter tries to give value to a worldwide audience even while writing from the perspective of the UK, so these courses have a similar bias. The way in which the course meets the needs of the global audience is based on addressing the following items:

- (i) Using a task approach that adjusts to individual and group contexts.
- (ii) Offering support for those not familiar with the academic writing required for assessment.
- (iii) Reviewing for unnecessary referencing to UK concerns.

Of these three aspects, Item (ii) has been extended in recent times and has proved of benefit to all learners, not just those who come from other cultures. This approach, however, still requires the learners to adapt to the assessment offered by the provider. Item (iii) does not ensure cultural bias is absent though it goes some of the way towards achieving this. Item (i) then holds the key to providing a course that can adapt to circumstances by setting out an approach where the students are challenged to carry out tasks but allowed to vary exactly how these tasks are achieved. The community aspects of the course depend on staff and students being willing to collaborate on group tasks and to be open to sharing results, progress and reflections – not necessarily something that is easily achieved. The experience of the course has shown that it has been effective for people from a wide range of backgrounds and that many students find great benefits from the task based approach. It does need to be acknowledged that even this approach does not remove all cultural bias from the course as it appears to be adopted more readily by those used to questioning the teacher's position than those who have operated in systems where the teacher is expected to have the right answer. The implicit assumption that it is desirable to be able to question is itself culturally based and may not be the best approach in the global context. In spite of this limitation, a task-based approach has shown inherent flexibility and is one that avoids the need to frequently change materials and tutor methods.

4. REPRESENTING DESIGNS

The limited success of global e-learning to date suggests that we need to capture the essence of good designs in a way that allows as much as possible of the learning experience to be transferred to the students' control while at the same time limiting dependence on particular aspects of culture. One possible way to achieve this involves separation of the resources (as learning objects), the design structure (as learning design), and the design rationale (as a pattern) within a framework that recognises the need for people support and the value of global collaboration. Such an approach will not be a solution for all cases but rather for those where part of the intention is to share views and allow diversity.

4.1 Learning Objects

Learning objects has emerged as a term to describe materials produced to support learning that can be represented electronically and separated from the way in which they are first used. The International Workshop on Wireless and Mobile Technologies in Education (IEEE) working group on learning object metadata have defined learning objects as 'any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning.' (IEEE, 2003). There are other definitions of learning objects (see, for example, Polsani, 2003; Rehak and Mason, 2003) but much of the work on them has focused on re-use (Littlejohn, 2003). In practice work at the Open University has shown that re-use is not

sufficient as a focus, as there is limited motivation for the producer. Rather it has been found that the learning object approach can best serve as a working method during the design process to help divide online courses into discrete sections and to reintroduce flexibility for both the designers and the learners.

Using learning objects for design means that we adopt a technique that helps people author flexible modular pieces of learning that can be well described and carried out in a reasonable amount of time (typically a few hours of activity). Weller, Pegler & Mason (2003) suggest a number of principles for using learning objects in e-learning courses in higher education: that the learning objects should remain autonomous and should in general avoid references to other sections; have sufficient self description to be understood; contain a task for learners; give opportunity for reflection and collaboration; and provide indications of resources with an expectation that alternatives can be found. It would seem sensible to use this relatively informal description flexibly omitting some aspects (for instance collaboration) where necessary and bending or breaking the rules according to the demands of the courses and their students.

A potential disadvantage that Weller et al's (2003) study identified was the lack of educational narrative that becomes evident when autonomous objects are collected together. They argue that

it remains to be seen whether the removal of explicit connections may render the material *more* meaningful for students, since it places the responsibility for making such

connections with the student. ... It is also in keeping with more constructivist sympathies, that there is not one set of connections to be made between concepts, i.e. those of the educator, but rather a multitude and every individual will create their own meaningful overarching narrative. (Weller et al., 2003)

If, on the other hand, narrative objects are created to overcome this problem then it would not be expected that these would be re-usable (Peglar, 2005), an expectation which removes one of the main advantages claimed for learning objects. It would seem that while the potential of learning objects for use in educational settings is clearly evident, educators still have a considerable way to go in finding out the most efficient ways to create and use them, and just what kind of value they do offer the various stakeholders involved in using them.

4.2 Learning Design

As suggested above, a learning object approach offers advantages in dividing courses up into sections but the overall structure that indicates how learners are to use the different objects can get lost. Introducing narrative objects partly addresses this difficulty but only in an informal way. Other work that has focussed on ways in which the design of learning can be represented suggests another possible way forward. The IMS Learning Design specification (Koper and Tattersall, 2005) is a development of the Educational Modelling Language (Hummel, Manderveld, Tattersall, & Koper, 2004) designed

by the Open Universiteit Nederland to enable all aspects of online courses to be described; not just the materials but also the order in which activities take place, the roles that people undertake, key criteria for progression, and the services needed for presentation to learners. The IMS Learning Design specification does not detail how the course material itself is to be represented but rather how to package up the overall information into a structure that is modelled on a play, with acts, roles (actors) and resources. The work was developed into a specification through collaboration within IMS to address the need for a more structured approach to representing learning. It develops the concept of content packaging, where different digital resources are gathered together with a listing of each resource describing their location, but it enhances this approach by providing an ordered presentation of the different entities within the unit of learning. IMS Learning Design is intended to support all pedagogies but it has a particular advantage over other approaches in that it enables the representation of collaborative activities that involve different roles for learners and tutors and need synchronisation in various ways.

4.3 Patterns

By building on work on architectural patterns (Alexander, 1979), Goodyear et al., (2004) have developed a concept of learning design patterns as a way to capture knowledge from designers and share them with practitioners. These patterns are viewed as the source for advice

when reproducing the general form but without the expectation that any cases will be exactly the same. Thus a pattern ‘describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice’ (Alexander et al., 1977, p.x).

Design patterns applied to learning seek to identify what can be provided as useful background, guidance and illustration in describing a set of interrelated descriptions for ways to assist learning online. A pattern is seen as something that will not be re-used directly but can assist the informed teacher to build up their own range of tasks, tools or materials that can draw on a collected body of experience. This produces a difference of position between what is needed to implement Learning Design as the aim of patterns is **not** to supply a complete solution but rather to give enough guidance and expect human intervention and variation in each re-use.

The format for a Learning Pattern (adapted from Goodyear et al., 2004) is:

- (i) A picture (showing an archetypal example of the pattern).
- (ii) An introductory paragraph setting the **context** for the pattern (explaining how it helps to complete some larger patterns).
- (iii) Problem **headline**, to give the essence of the problem in one or two sentences.

(iv) The **body** of the problem (its empirical background, evidence for its validity, examples of different ways the pattern can be manifested).

(v) The **solution**. Stated as an instruction, so that you know what to do to build the pattern.

(vi) A diagrammatic representation of the solution.

(vii) A paragraph linking the pattern to the smaller patterns which are needed to complete and embellish it.

These patterns are then integrated into a pattern language by providing related components such as a *discussion group* pattern that draws on patterns for *discussion role, facilitator, and discursive task* (Goodyear et al, 2004).

The strength of the patterns approach is shown in communities adopting them that have emerged in areas of architecture and computer science. In such communities design patterns are drafted, shared, critiqued and refined through an extended process of collaboration. It is evident that patterns have the potential to make a contribution to the sharing of techniques between developers of learning activities.

In contrast to Learning Design, patterns offer informality and are open to different interpretations and different implementations at the detail level. This can lead to problems with imprecise vocabulary, but it can also be seen as an easier, less formal way of constructing these descriptions and a way that encourages users to engage with and

challenge the contents of patterns rather than use pre-packaged designs.

4.4 Applying objects, designs and patterns

The division into objects, designs and patterns provides different levels of formality for course descriptions and the chance that different groups and cultures can work in different ways with material. This has been demonstrated at the OU on a small scale where learning structures and resources have been re-used across different levels of courses, in staff development and with global learning groups. This approach has yet to be shown to work on a larger scale but it does align with the internet culture by allowing for different levels of interest, sharing of experiences, alternative routes and selecting from and managing growing resources. The approach also matches well with open structures both in providing objects, designs and patterns and in drawing from other sources and cultures.

5. WHAT IS NEEDED FOR GLOBAL LEARNING

The problems that have been found in trying to provide global online courses mean that there is no easy recipe for success. However, study of the actions of organisations involved in online learning and the experience of producing global courses at the Open University suggest that there are lessons to be learned about what is needed for global learning. These lessons can be categorised as relating primarily to course design and relating to the production process.

Lessons for course design:

- A task-based approach helps robust learning

A task-based approach to learning design allows the learner to adjust how they respond depending on available resources, the community of learners and their own background. The learner also needs to take an active position that will help them to ground knowledge through reflection and exchange with others. Such a task-based approach does mean that each presentation is different and that there are risks that some tasks will not work with some groups. However the adaptivity provided by the task outweighs the possible disadvantages.

- Working with learning objects creates more flexibility

Learning objects have been promoted as a solution for re-use and exchange of content. A structured approach to describing small sections of learning does indeed have advantages when sections need to be transferred between courses; however, the main advantage is in making the course more modular and able to be separated into different activities which allows students to follow optional paths. Optional work has often been found detrimental in distance learning as it may be either completely omitted by the learner, in which case the investment in producing the material is wasted, or students may opt to carry out all the optional activities leading to overload and dilution of their effort. A learning object approach may not entirely

avoid these problems but in practice it does mean that students can select a personal path through a course.

- Mixed media is stronger than single media

Adopting different ways to reach the learner has proven to be a benefit for courses operating at a distance. The dominant medium has undoubtedly been printed text and feedback consistently shows that material produced for a course and printed for the student has the highest rating. However it is also evident that the inclusion of a variety of materials provides motivation and support for students with different preferences. With the move to online courses a mix in media needs to be retained and supported by offering a variety across tasks and opportunities for a range of interactions with others. It needs to be remembered that approaches to technology are also evolving amongst learners – evidence of this can be seen in a gradual acceptance of e-books as an alternative to print materials and reports that are now emerging of students preferring to read on-screen.

Lessons for producing courses:

- Representing designs helps understanding and transfer of materials
- Generating new courses that operate online has changed the production dynamic in universities. It has led to more variety and shorter time-scales for production of courses. In many cases the quality of the result has been pleasing but the strain on the developers has been significant. The practice of recording designs in ways that

represent elements has many advantages, although it may be hard in practice to determine which is the 'better' way to achieve a particular goal. This practice allows commonality to be revealed and offers insight into ways to clarify the stages in online activities. It has proved a useful method both at a high-level in terms of models for courses as well as in terms of models for tasks and activities.

- Evaluate innovations and incorporate findings into future developments

Studying what happens in courses is vital and the Open University has followed an approach of developmental testing when introducing new initiatives into courses. For example the technology used in the introduction of synchronous communication tools to support language learning was piloted and the tutorial design that would use the technology examined by studying how small groups of students took part in sample activities. This developmental approach is now being augmented by innovations being trialled as courses move into practice. For example a first year course on using the internet was launched with a pilot year of 900 students before scaling up to operate as one of the largest online courses in the world with 10,000 students in its largest year of operation. Gathering information from students, tutors and developers becomes part of the operational approach with more the 30,000 students giving feedback on their courses each year.

- Keep the human in the loop

The model advocated in this chapter has aspects that could be automated (for example, the selection of different learning objects, the tailoring of different paths for learners, and the building of tutor groups). Such automation can be useful but it should not eliminate the human element from the learning. It is very difficult to allow for all options in automation and implemented systems tend to make simplifying assumptions that may not be valid. For example, the concept of learning styles suggests that individuals may be categorised and steered towards material that is visually more or less rich according to preference. However, learners like to vary what they use and also explore the alternatives. Providing for learner choice avoids the need to predict accurately and helps the students have ownership of their learning. The same argument applies for each of the roles in learning: the designer needs to explore options rather than be constrained by a fixed library of designs; the tutor to work out the best kind of guidance rather than pass on prewritten advice.

6. CONCLUSION

In this chapter the opportunities e-learning has to offer higher education in the global arena have been considered and reasons why those opportunities are difficult to realise in practice explored. It is clear that e-learning has many benefits to deliver to teachers, learners and organisations in our global community, and that producing e-learning for the global community involves a wide range of technical

and educational choices. At this early stage of the evolution of e-learning there are no obvious solutions and no easy recipe for success. But building knowledge of developments and the trends and methods that show promise in this area, and learning about innovative practices undertaken by institutions who have already experimented in this field is a way forward for those involved in e-learning or taking it up as a new challenge¹.

REFERENCES

- Alexander, C. (1979). *The Timeless Way of Building*. New York: Oxford University Press.
- Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl-King, I., & Angel, S. (1977). *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford University Press.
- Conole, G., Carusi, A. and De Laat, M. (2005). Learning from the UKeU experience. ICE conference Higham Hall. Reprinted as an e-Learning Research Centre publication, University of Southampton. Available: <http://www.elrc.ac.uk/download/publications/ICEpaper.pdf> [July, 2005]
- DfES (2005). Harnessing Technology: Transforming Learning and Children's Services. Available: <http://www.dfes.gov.uk/publications/e-strategy/docs/e-strategy.pdf> [July, 2005]
- Goodyear, P., Avgeriou, P., Baggetun, R., Bartoluzzi, S., Retalis, S., Ronteltap, F., & Rusman, E. (2004). Towards a pattern language for networked learning. Proceedings of Networked Learning 2004, Lancaster University, England, pp. 449-455.
- House of Commons, UK e-University Report. (2005). Third Report of Session 2004-05. Report together with Formal Minutes, Oral and Written Evidence. Available: <http://www.publications.parliament.uk/pa/cm200405/cmselect/cmmeduski/205/205.pdf> [July, 2005]
- Howcroft, D. (2001). After the Goldrush: Deconstructing the Myths of the dot.com Market. *Journal of Information Technology*, 16, 195-204.
- Hummel, H. G. K., Manderveld, J. M., Tattersall, C., & Koper, E. J. R. (2004). Educational Modelling Language and Learning Design: New Opportunities for Instructional Reusability and Personalised Learning. *Journal of Learning Technology*, 1(1), 111-126.
- Kirkwood, A. (2003). Understanding Independent Learners' Use of Media Technologies. *Open Learning*. 18(2), 155-175.

- Koper, R. & Tattersall, C. (Eds.) (2005). *Learning Design: A Handbook on Modelling and Delivering Networked Education and Training*. Springer Verlag: Berlin-Heidelberg.
- Littlejohn, A. (Ed.). (2003). *Reusing Online Resources: A Sustainable Approach to E-learning*, Kogan Page: London.
- Livingstone, D. W. (1999). Exploring the Icebergs of Adult Learning: Findings of the First Canadian Survey of Informal Learning Practices. *Canadian Journal for the Study of Adult Education*, 13(2), 49-72.
- Parr, J. (2004). A Review of the Literature on Computer-Assisted Learning, Particularly Integrated Learning Systems, and Outcomes with Respect to Literacy and Numeracy. Wellington, New Zealand: Ministry of Education. Available: http://www.minedu.govt.nz/print_doc.cfm?documentid=5499 [July, 2005]
- Pegler, C. (2005). Objects and Issues – A Sunday Supplement View of Continuing Professional Development in Higher Education. *Open Learning*, 20(1), 51-64.
- Polsani, P. R. (2003). Use and Abuse of Reusable Learning Objects. *Journal of Digital Information* 3(4). Available: <http://jodi.tamu.edu/Articles/v03/i04/Polsani/> [July, 2005]
- Quinn, C. (2000). mLearning: Mobile, Wireless, In-Your-Pocket Learning. Available: <http://www.linezine.com/2.1/features/cqmmwiyp.htm> [July, 2005]
- Rehak, D. R. and R. Mason (2003). Keeping the Learning in Learning Objects. In A. Littlejohn (Ed.) *Reusing Online Resources: A Sustainable Approach to E-learning*. Kogan Page: London, 20-35.
- Ross, S., Kukulka-Hulme, A., Chappel, H. & Joyce, B. (2004). Taking E-moderating Skills to the Next Level: Reflecting on the Design of Conferencing Environments. *Journal of Asynchronous Learning Networks*, 8(2).
- Times Online. (2004). The Sunday Times University Guide Table: Best Marks for Teaching. Available: <http://www.timesonline.co.uk/article/0,,84051246628,00.html> [July, 2005]
- Weller M. J., Pegler C. A. & Mason R. D. (2003). Putting the Pieces Together: What Working with Learning Objects Means for the Educator. Paper presented at the E-LearnInternational, February 2003, Conference, Edinburgh. Available: <http://iet.open.ac.uk/pp/c.a.pegler/ukey/edinburgh.doc> [July, 2005]

NOTES

[1] This chapter draws on a broad range of experience gained in working with my colleagues at the Open University and in collaborative projects with other organisations.