



A practical guide to providing flexible learning in further and higher education

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Preface

The approach to quality and standards in higher education (HE) in Scotland is enhancement-led and learner-centred. It was developed through a partnership of the Scottish Funding Council (SFC), Universities Scotland, the National Union of Students in Scotland (NUS Scotland) and the Quality Assurance Agency for Higher Education (QAA) Scotland. The Higher Education Academy has also joined that partnership. The Enhancement Themes are a key element of a five-part framework that has been designed to provide an integrated approach to quality assurance and enhancement. The Enhancement Themes support learners and staff at all levels in enhancing higher education in Scotland; they draw on developing innovative practice within the UK and internationally.

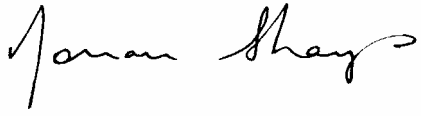
The five elements of the framework are:

- a comprehensive programme of subject-level reviews undertaken by higher education institutions (HEIs) themselves; guidance on internal reviews is published by SFC (www.sfc.ac.uk)
- enhancement-led institutional review (ELIR), run by QAA Scotland (www.qaa.ac.uk/reviews/ELIR)
- improved forms of public information about quality; guidance on the information to be published by higher education institutions is provided by SFC (www.sfc.ac.uk)
- a greater voice for students in institutional quality systems, supported by a national development service – student participation in quality scotland (sparqs) (www.sparqs.org.uk)
- a national programme of Enhancement Themes aimed at developing and sharing good practice to enhance the student learning experience, facilitated by QAA Scotland (www.enhancementthemes.ac.uk).

The topics for the Enhancement Themes are identified through consultation with the sector and implemented by steering committees whose members are drawn from the sector and the student body. The steering committees have the task of establishing a programme of development activities that draw on national and international good practice. Publications emerging from each Theme are intended to provide important reference points for HEIs in the ongoing strategic enhancement of their teaching and learning provision. Full details of each Theme, its steering committee, the range of research and development activities and the outcomes are published on the Enhancement Themes website (www.enhancementthemes.ac.uk).

To further support the implementation and embedding of a quality enhancement culture within the sector – including taking forward the outcomes of the Enhancement Themes – a new overarching committee has been established, chaired by Professor Kenneth Miller, Vice-Principal, University of Strathclyde. This committee has the important dual role of supporting the overall approach of the Enhancement Themes, including the five-year rolling plan, and institutional enhancement strategies and management of quality. We very much hope that the new committee, working with the individual topic-based Enhancement Themes' steering committees, will provide a

powerful vehicle for progressing the enhancement-led approach to quality and standards in Scottish higher education.

A handwritten signature in black ink, reading "Norman Sharp". The signature is written in a cursive style with a prominent initial 'N' and a long, sweeping tail on the 'y'.

Norman Sharp
Director, QAA Scotland

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- The Quality Assurance Agency for Higher Education for funding (contract S0 47) to support this work.

1 Introduction

1.1 About this guide and who it's for

This guide is intended to help those involved with planning, managing, designing and delivering flexible courses, as well as those working on the preparation of teaching and learning materials. Its main purpose is to introduce and describe a shareable model of flexible learning which can be used to support discussions about the kind of learning and teaching that institutions can provide. A simple but important constituent of the model is the notion of 'continuums'. The idea that aspects of flexibility can exist on a sliding scale from 'fully on' to 'off' is a simple but useful one (Lewis, 1986) which can help to avoid a simplistic approach to the problem of providing flexible learning opportunities. A series of seven case studies has been conducted in the University of the Highlands and Islands Millennium Institute (UHI) and the University of Dundee using this model of flexible learning as the basis. Of these, four provided sufficiently complete information to enable analysis to be undertaken. You can see the results in Appendix 10 and in the separate literature review and model for flexible programme delivery (Normand and Littlejohn, 2006).

It is becoming clear to those working in this and related areas (such as e-learning) that the real challenge for future sustainability lies in moving from the present stage of implementation, which might be characterised as a bottom-up activity or a 'bolted-on' adjunct, to one that is more embedded in institutional structures and procedures. To do this, many observers (van der Klink and Jochems, 2004; Casey et al, 2005; Stiles, 2005) believe that we need to develop the professional cultures of those working in educational institutions and change the way those institutions work and are structured, in order to provide the learning opportunities that current and future learners require. This guide touches on some of these issues in Section 4 but, increasingly, those working in this area are realising that much more work needs to be done to explore this aspect of introducing flexible learning and sustaining it. Those interested in this vital area will find the closely related work *Integrated E-Learning* by Jochems, Merriënboer and Koper (2004) very useful.

In putting together this guide we have been strongly influenced by the work of Paul Ramsden (1992) and Dianna Laurillard (1994), who have both written extensively on teaching in higher education (HE). It is important to talk about 'teaching' as distinct from 'learning', and to be clear that we are doing so; recent discourse on educational matters has tended to focus on learning, with teaching being subsumed as a result. A side effect of this has been to encourage a certain vagueness about the business of teaching and instruction, which has not been helpful. Although educational developers and others in the UK often describe their pedagogic work in terms of 'social constructivism', this has little resonance in the practitioner's teaching communities, and often remains an ambition rather than a reality. Indeed, the requirements of flexible learning and e-learning are revealing a shortage of educational design skills in the teaching workforce for HE and further education (FE). Part of this problem is the lack of a common language, as a group of educational developers concluded:

'that many teachers do not possess a vocabulary for articulating and sharing their pedagogic strategies and designs with others, particularly beyond their cognate discipline areas' (Beetham, 2004).

We think that the HE and FE sectors have much to learn in this respect from the open learning and instructional design communities and their team-based approach to developing learning designs. The provision of a shareable model of flexible learning, as presented here, is a step in this direction.

1.2 Technology

Perhaps surprisingly, we do not think that technology is the primary determinant of flexibility, although it is an important enabling factor. We are critical and sceptical about the claims being made for technology in education, and think that this is a healthy attitude to counteract the recent excesses of the 'e-learning bubble'. It is much better to regard technology as a set of generic 'services' or tools that may be called on to support flexibility, and instead concentrate our efforts on the far more profound issues of designing for flexible learning. This also means designing for flexible teaching, as learning and teaching are both different sides of the same coin.

As we have already highlighted, it also means examining the institutional change required to actually implement flexibility as well as the pedagogic skills needed to service it. Technical issues are not the hardest problems to solve, which partly explains their attraction to management. Organisational aspects of flexibility such as team teaching, sharing of learning materials and joint ownership of courses, new working relations, internal reorganisation and control of service departments are, however, much harder to deliver.

1.3 Attitude and values

This guide takes a rather informal tone and has a bit of an 'attitude' which is critical of some aspects of the status quo and uses of technology. We also squarely advocate the continuing importance of teachers in our educational systems. No claims are being made that we are discovering anything new here – indeed, there is an element of flexibility in 'traditional' learning settings. You are not expected to follow the recommendations in this guide slavishly; there are plenty of 'exceptions to the rules', but they are intended to provide you with clear support to help in finding solutions for your own working situation. The ambition is to help to provide a solid foundation in this area which you can develop to suit your own needs and interests. In Section 5, 'Sources and references', we provide a recommended 'core' list of further reading and resources for you to follow up on.

This guide is intended to help and encourage you to make more flexible learning opportunities for your students, and to do so in an efficient and sustainable way that will enable you and your colleagues to keep your workloads under control. The guide advocates a pragmatic, rational, coherent and educationally valid approach to flexible learning. It also subscribes to the view that working in such complex environments as educational institutions requires a holistic approach to understanding the problems and developing solutions. Despite the adoption of the rhetoric of enterprise by educational institutions and those who manage them (as we note in Section 4), there is little use of business-like methods such as systems analysis or reliable means of measuring what actually goes on. To effectively implement changes such as flexible learning and e-learning in this environment needs a managerial philosophy that moves beyond a simplistic concentration on outputs to an understanding of process. In this respect, the education sector does indeed have much to learn from some parts of the world of business.

1.4 Content creation

As a rule, you should only think of authoring new content as a last resort. Remember, the 'value' in flexible learning – as in face-to-face teaching – is in the teaching and interaction with students and creating the right conditions in which they can learn. It is a common mistake to equate the creation and delivery of content with teaching (both on-line and face to face) – it is not the same. Do not be afraid to use textbooks and third-party resources to support your e-learning content strategy; this is very common

in the e-learning 'hotspots' of the USA and Australia. Following this strategy allows you and your team to concentrate on teaching and developing your students' understanding, and avoids you getting sidetracked into content creation.

1.5 Terminology

A quick note on terminology: we use both 'student' and 'learner' as terms in this guide. We tend to use the term 'student' from a provider's perspective when we are talking about something that students use or consume, or if we have to do something for them or with them. We tend to use the term 'learner' when discussing or speculating about aspects of the learning process from an educational point of view.

1.6 Background to the production of this guide

The production of this guide has been funded by QAA. The guide reflects the perspectives and needs of two very different HE institutions (HEIs) – UHI and the University of Dundee – which both need more flexibility in their course offerings, for different reasons. Dundee is primarily a single campus-based university whereas UHI is a geographically distributed federal organisation, some of whose partners also include FE provision.

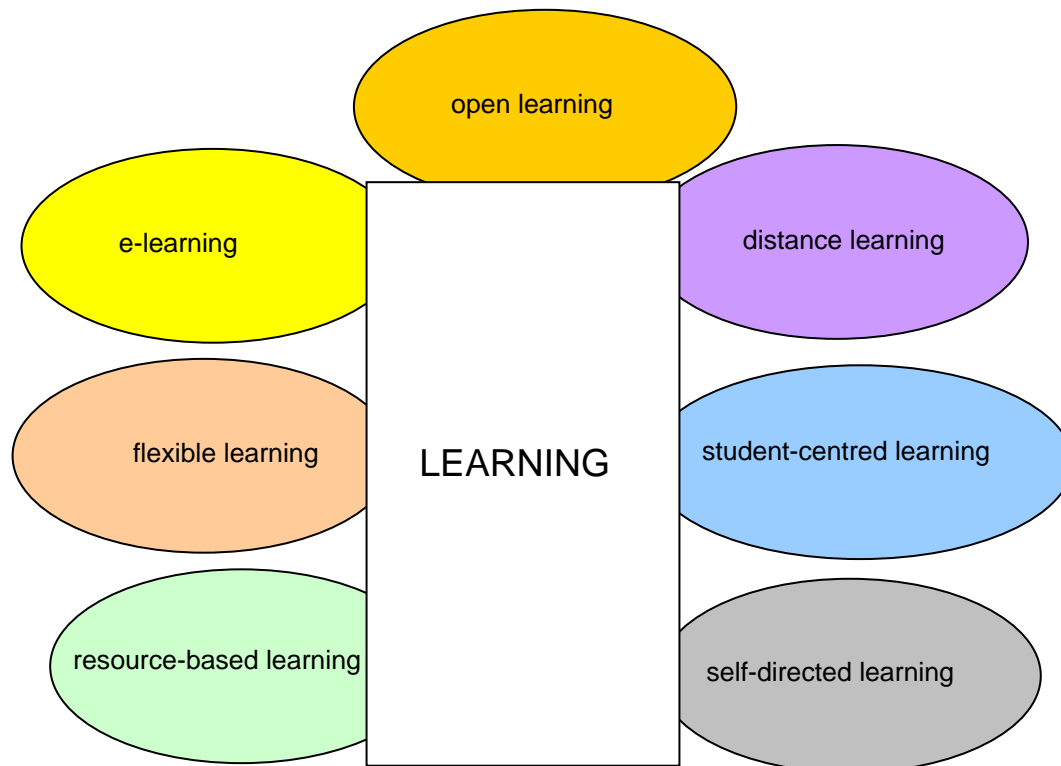
1.7 How to use this guide

You can dip into the guide as you please. It has been written to support this type of use and hence there is some repetition, as we do not assume that you are reading it from start to finish. However, to get the most out of it you should read the Introduction and Quick Start sections straight through from start to finish at least once.

2 Quick start

2.1 Flexible learning – what is it?

Figure 2.1: The relationship of flexible learning to other ‘genres’ of learning



There is no single definition for flexible learning within the literature. In fact, it is often used synonymously with the other terms shown in Figure 2.1 to encompass other approaches, including ‘open learning’, ‘distance learning’, ‘e-learning’ and so on. This is not surprising, as within any programme of study there may be elements of all of these modes of delivery. But this vagueness about definition and the use of terminology can be counterproductive, since an important question underpinning any definition is ‘who is asking?’ – ie ‘for whom is the learning flexible?’

We present here a useful model that we have adopted. It focuses on flexible ‘learning’ as having certain key characteristics; these are described in the following section.

2.2 A shareable model of flexible learning

In this section we introduce a model of flexible learning based on the work of Collis and Moonen (2004). They introduce the idea of there being five basic ‘dimensions’ of flexibility (Table 2.1), which can be further split down into 19 categories (Table 2.2).

As you will see below, the model is fairly straightforward and intuitive and, perhaps most importantly, can help to support analysis and discussions among those who are charged with providing flexibility. The grid in Table 2.2 summarises the model, which has been used with seven different programme teams at UHI and the University of Dundee to provide a way for them to self-assess the extent of flexibility in their programmes. The results of four completed case studies are included in Appendix

10. The grid is reproduced in an extended form in Appendix 3 for you to use as a self-assessment tool. You will also find other useful tools and tips in the Appendices.

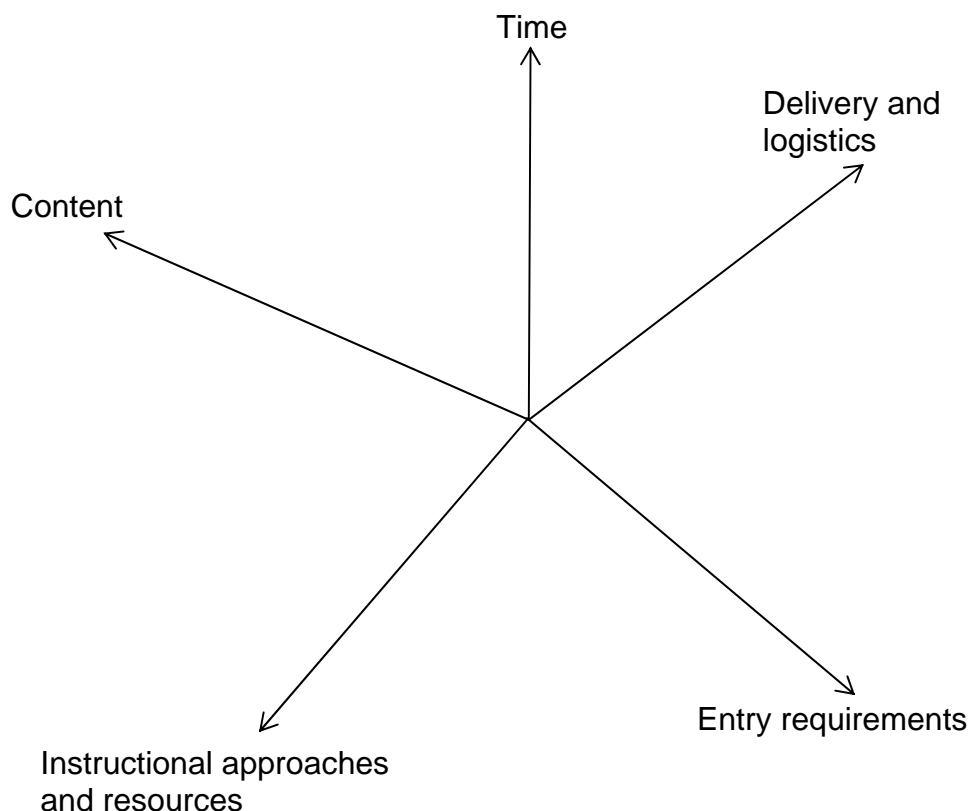
2.2.1 The five dimensions of flexibility

Five main dimensions can help to describe and measure the type and amount of flexibility in a course, as shown in Table 2.1.

Table 2.1: The five dimensions of flexibility

Time
Content of the course
Entry requirements
Instructional approaches and resources
Delivery and logistics

Figure 2.2: The five dimensions of flexibility



Each of these dimensions contains a continuum along which you can place your course offerings. The diagram in Figure 2.2 is presented as a visualisation tool for you and your colleagues. These five dimensions of flexible learning, which are further subdivided in Table 2.2, essentially represent a shift from teacher-led to learner-led

educational processes and choices. This perspective reflects the drive for learners to have control over their own learning, and is supported by an educational philosophy (constructivism) that many lecturers in FE and HE subscribe to.

According to this model, learner choice must be regarded as a central component of flexible learning – which gives us the answer to the question posed earlier of ‘who is asking?’. In other words, for whom is the learning flexible? This in turn provides a useful perspective from which to assess and measure the type and degree of flexibility. But perhaps the most important aspect is the potential to offer a shareable model of flexible learning/teaching to those involved in implementation. The ability of such constructs as our model to be used by the different parts of an institution as a focus for discussions and shared meaning is a potentially powerful one, and fits in with the views of a variety of writers (Wenger, 1998; Conole, 2005).

Table 2.2: Dimensions of flexibility (from Collis and Moonen, 2004)

The dimensions of flexibility	
More fixed <<----->> More flexible	
Time	Fixed Flexible <<----->>
1 Starting and finishing a course	
2 Submitting assignments and interacting within the course	
3 Tempo/pace of studying	
4 Moments of assessment	
Content	Fixed Flexible <<----->>
5 Topics of the course	
6 Sequence of different parts of the course	
7 Orientation of the course (theoretical, practical)	
8 Key learning materials of the course	
9 Assessment standards and completion requirements	
Entry requirements	Fixed Flexible <<----->>
10 Conditions for participation	
Instructional approach and resources	Fixed Flexible <<----->>
11 Social organisation of learning (face to face; group; individual)	

12 Language to be used during the course	
13 Learning resources: modality, origin (instructor, learners, library, WWW)	
14 Instructional organisation of learning (assignments, monitoring)	
Delivery and logistics	Fixed Flexible <<----->>
15 Time and place where contact with instructor and other students occur	
16 Methods, technology for obtaining support and making contact	
17 Types of help, communication available, technology required	
18 Location, technology for participating in various aspects of the course	
19 Delivery channels for course information, content, communication	

2.3 Teaching – it’s still important

What you know about teaching your subject is still very relevant. But as we have already mentioned, there is a need for new design skills and to work as a team which shares the same teaching materials. The amount of contact that you and your colleagues will have with students on the course will vary according to the design of the course and the options you give to learners. You might have less contact with your students, but instead invest the accumulated teaching expertise of yourself and your colleagues in the actual design of the course. This approach takes quite a bit of getting used to at first for those moving from ‘normal teaching’ – it’s a bit like teaching by remote control and can feel a bit disorientating. So this is why we stress the importance of the support that a team can provide and the need to develop the appropriate design and student management skills.

In Appendix 6 we have included some useful models of teaching from the work of Paul Ramsden (*Learning to Teach in Higher Education*) and Dianna Laurillard (*Rethinking University Teaching*), which are intuitive, useful and capable of extension and modification to local needs. We would strongly recommend their two books to those working in this area.

The outputs of the Joint Information Systems Committee (JISC) e-learning programme are also well worth a look. They address many of the pedagogic questions we are discussing (see <http://www.elearning.ac.uk/resources/>).

2.4 The benefits

For institutions the benefits may not be primarily financial (at least not at first), but can include: access to new markets that would otherwise be difficult to reach; retaining existing student groups; improving retention and progression among students; catering for non-traditional students; better use of physical resources such as labs and lecture halls; and better use of human resources such as subject experts

and lecturers and tutors. An important driver for some institutions is the need to cater for an increasingly diverse student population.

For students there can be a wider choice of subjects, study modes and providers by making the 'where', 'when' and 'how' of learning more flexible. Increasingly important are more basic issues such as the cost of the course, ways of paying (instalments etc), the type and cost of course study materials, and the amount of on-line activity that may be required. Flexibility over time and place of study and assessment methods continue to be major factors for students. The ability to access appropriate learning opportunities (certificated and non-certificated) over the course of an employed lifetime which now typically involves several career changes has been growing in importance over the last decade or so. And the same increasingly applies to those not in paid work, where changing lifestyles and situations can create new demands for access to learning.

2.5 The challenges for students, teachers and institutions

For students the new choices of which provider and what study mode bring new responsibilities – especially how to pay for it all. Not all students want to have a choice and some are not in a position to exercise it. Support and guidance have vital roles to play for both learning providers and students. In the UK, The Open University (OU) provides extensive support and advice to prospective students to make sure that they make the right choice for their circumstances. This upfront investment pays dividends further down the line in terms of progression and retention, and contrasts with arrangements for dealing with prospective students in 'mainstream' education.

In the popular vision of lifelong learning, students take more control of their own learning. This is a fine ambition, but we need to recognise that the capacity to do so varies at different points in an academic career. There can be a danger of projecting an inappropriate learner model onto prospective students. This happened during the e-learning bubble and the ill-fated UK e-University (the UK e-U), in which the dominant model was of an autonomous, self-motivated, confident, information technology (IT) literate and financially comfortable student – which does not represent the large majority of potential learners today. Instead, it is better to recognise the increasingly diverse nature of the student population and make plans to accommodate their needs. 'Designing for diversity' might be a good catchphrase, but doing it can be quite tricky.

For institutions the big challenge is making it work and doing so in a way that is sustainable. We touch on some of these matters in Section 4. There is a considerable way to go for most of our institutions, where internal communication and coordination is a major challenge and a 'silo' mentality among academic and service departments is often the norm.

Flexible learning presents some quite profound challenges to existing institutional structures. In many of our institutions, accommodating e-learners into existing administrative processes is still a big problem. A classic example is the inability of the registry to process students quickly enough for the central information/computer services to issue an ID card at the start of their academic career or arrange membership of a new programme module – a situation often exacerbated by the two service departments having incompatible record-keeping systems operating on different timescales. Even a leading global e-learning provider like the University of Southern Queensland (USQ) experiences these kinds of problems. USQ has produced an excellent case study (Postle et al, 2003), sponsored by the Australian government, on introducing e-learning into traditional universities; we have provided a link to it in Section 5. To cope with these kinds of problems, bottom-up initiatives have produced a rich variety of 'workarounds' which testify to the ingenuity and

determination of teaching staff. Unfortunately, this kind of activity is often not sustainable, and the parent organisation neither learns nor changes as a result.

An issue we face in discussions about flexible learning and e-learning is that we tend to focus on the surface issues, and often the technical ones, when the problem is really one of introducing pedagogic and structural change into educational institutions. Universities and colleges are large, complex, slow-moving and loosely constituted, with a high degree of autonomy and independence at local levels. In research sponsored by the Economic and Social Research Council, researchers from the University of Newcastle upon Tyne (Pollock and Cornford, 2000) found that the real underlying problem surrounding the introduction of technology into HE was a mismatch and clash of organisational models and cultures. However, the change that flexible learning and e-learning requires from institutions is highly unlikely to be achieved by staff development alone. Both these forms of learning require a more coherent, centralised and corporate style of organisation, which conflicts with deeply entrenched pedagogic values and cultural attitudes in the sector. There is an important role for top-down action here, which is why we have included a link to a discussion of this issue by Professor Mark Stiles in Appendix 5.

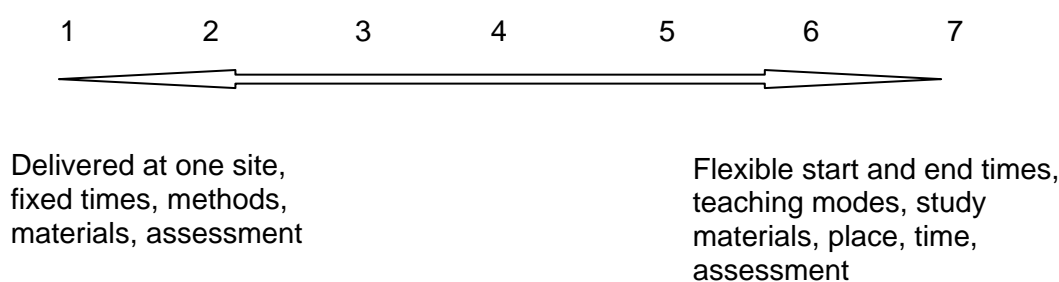
3 Practical approaches to flexibility

3.1 Getting started on designing for flexible learning

Designing for good-quality, efficient and economic flexible learning depends on the experience, expertise and resources your team has at hand. It also needs an acceptance that there has to be upfront investment in terms of time and resources to make it work.

To help in conceptualising this design problem, picture it as existing on a continuum of flexibility that runs from a very traditional 'closed' and inflexible face-to-face, campus-based course towards more 'open' and flexible learning opportunities. The two ends of the continuum might be represented in an exaggerated manner as a 'one-off' approach at the traditional end, with courses being 'owned' by individual academics and tied down in terms of place and time. At the other end would be a more reproducible 'industrial' process, where much more effort goes into the design of the course and materials to make them more flexible and easier to reproduce from year to year by different people. Figure 3.1 represents this continuum.

Figure 3.1: A seven-stage continuum of flexibility



There are various levels at which teams may plan to develop their capacity to make a course flexible. The seven-stage model really just represents a conceptual 'peg' on which to hang our ideas about how to develop whole programmes or courses. The degree to which courses are made flexible may depend on the resources available, market demand and the inherent nature of the subject matter, for example practical requirements for access to specialist equipment and staff. The flexibility grid provides a more detailed way of planning and analysing flexibility – see Table 2.2 and Appendix 3.

3.2 Planning for student autonomy – using the student profiler in Appendix 9

The idea behind this is very simple: students are generally expected to become more self-directed and independent as they progress through their academic careers (Figure 3.2). The Scottish Credit and Qualifications Framework (SCQF) provides a unified way of describing different aspects of learning at different levels (see <http://www.scqf.org.uk/index.asp>). Relevant aspects of learning that it describes are 'Autonomy, accountability and working with others' and 'Generic cognitive skills'. Together these can be used at the 12 different levels of the SCQF to provide a shareable model of student autonomy and learning. As the SCQF states:

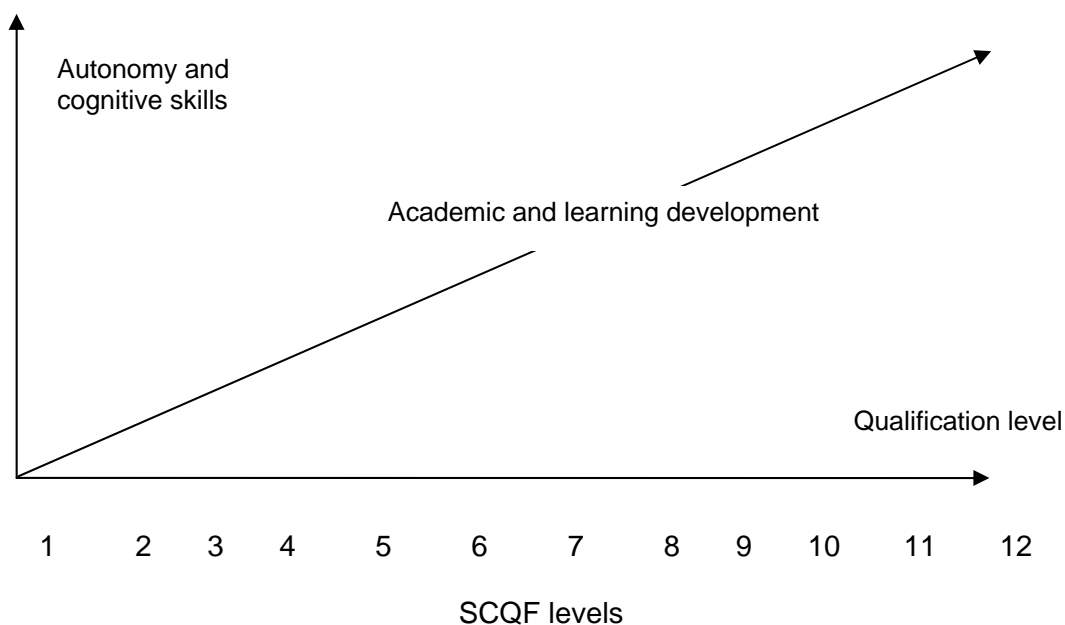
'These descriptors set out the characteristic generic outcomes of each level. They are intended to provide a general, shared understanding of each level and to allow broad comparisons to be made between qualifications and learning at

different levels. They are not intended to give precise or comprehensive statements, and there is no expectation that every qualification or programme should have all of the characteristics. The descriptors have been developed through a series of consultations and are offered as a first working guide which will be revised in the light of feedback on their use.’ (SCQF, 2003; Appendix 9).

We may quibble with the terminology, but the descriptors do indeed provide the basis of a shared model that can be used to describe the general characteristics at different levels from schoolwork to doctoral levels. By using these as a guide in the student profiler we can plan for the degree of flexibility that should be provided to suit the level of student development, and – just as importantly – use it as a means of describing the support that students may need at the different levels.

Note: each level is intended to describe an end result for where we want get to with our students; we can use an earlier level to describe where we think our students currently are. This provides a handy – and most importantly for us – shareable way to describe where students are and where we want to take them. In turn, it can provide valuable guidance in helping us to decide what type of flexibility may be appropriate for that level and, of course, the particular students we are dealing with. The ability to provide adequate support and guidance to students to make the best use of flexible learning opportunities is likely to be a key factor in successful implementation (as the OU and other distance-learning providers have recognised). It is likely that with an increasingly diverse student population the amount of guidance and support will need to increase from current levels.

Figure 3.2: Student profiler

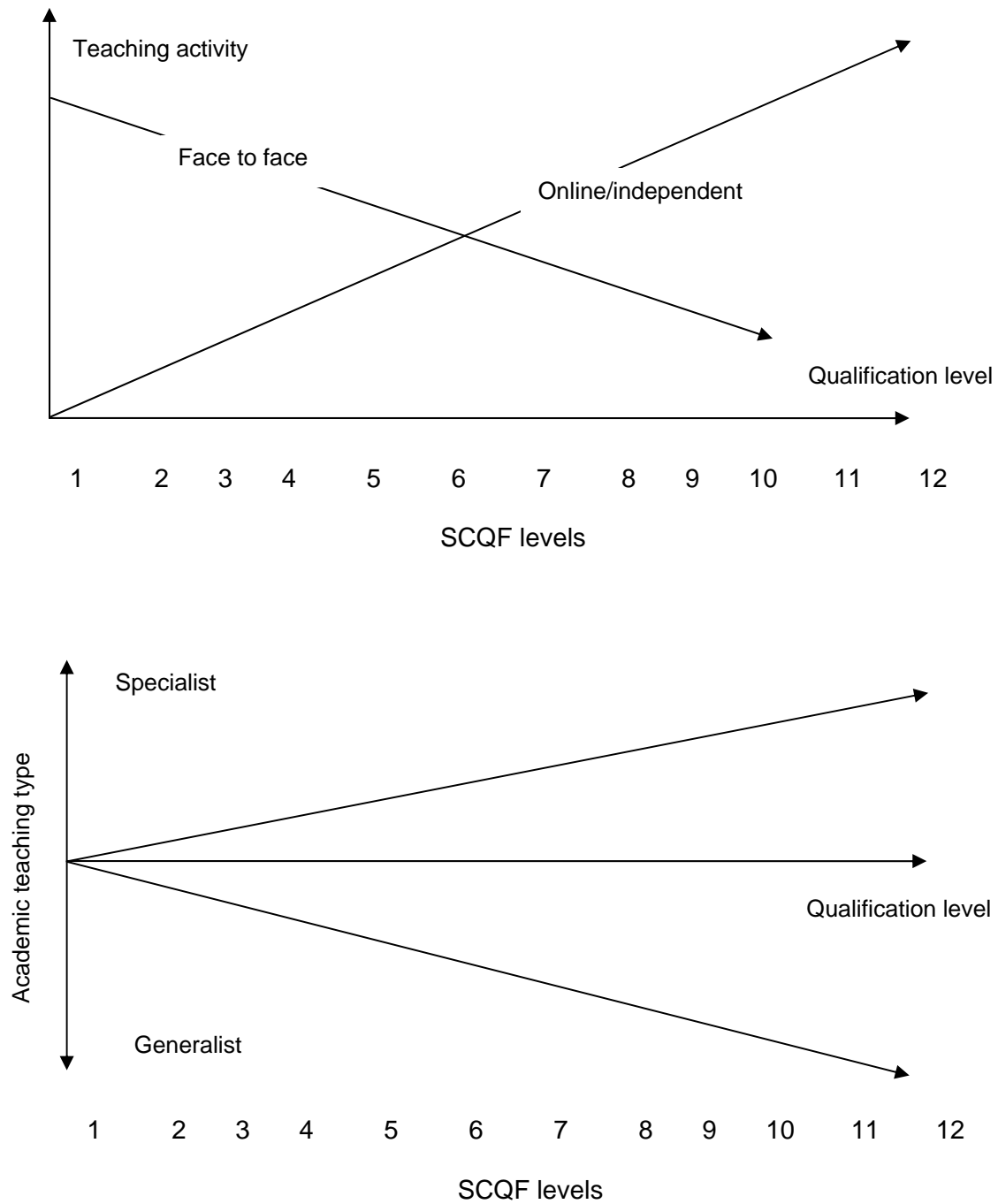


3.3 Course design visualisation tools

These simple tools follow on from our use of the student profiler and describe two important aspects of designing for flexibility: ‘teaching blend’ (Figure 3.3) and ‘specialist and general staffing’ (Figure 3.4). Again, we use the SCQF as a basis. Note: it is up to you to arrive at your own position on these diagrams. For instance, the teaching-blend diagram for a particular course might be a flat-line plateau up to SCQF level 5 (Standard Grade), which would indicate nearly 100 per cent face-to-

face teaching, but thereafter on higher-level courses would start to slope down to indicate more on-line/independent study. You could also place different courses on such a diagram.

Figure 3.3: Teaching blend and Figure 3.4: Type of teaching staff



3.4 Technology – avoiding the hype and misconceptions

The main point we wish to make here is that people often turn to technology for solutions to problems that are not really technical, but rather managerial and educational. We introduce the notion of the need to develop ‘educational expertise’ which should lead to the correct use of technology. At present, many people seem to hope that the reverse arrangement will work, despite ample evidence otherwise.

According to the Observatory on Borderless Higher Education (OBHE), funded by UK universities, the whole education sector has lived through the ‘e-learning bubble’ of the late twentieth and early twenty-first centuries (OBHE, 2003), which shared many of the same characteristics as the ‘dotcom bubble’ of the same era.

This tendency found its ultimate expression to date in the collapse in late 2004, with debts of around £100 million, of the government-backed UK e-U, criticised as a ‘shameful waste of public money’ by the chair of the Science and Technology Select Committee, Dr Ian Gibson. For more see:

<http://education.guardian.co.uk/elearning/story/0,10577,1190470,00.html>

The overarching educational and social delusion in this period was that one, rather elitist, model of learning was promoted with a vision that saw students as isolated, individualist, competitive, financially comfortable, self-motivated and autonomous learners. It was believed that this model could be mapped on to the whole sector. As the UK e-U discovered to its cost, very few people (including the elite) are attracted to this mode of learning. The more realistic mood now is for blended learning – a mix of face-to-face techniques and flexible/distance learning supported by technology. As the head of the Higher Education Funding Council for England (HEFCE) admits:

‘We still need to understand a lot more about how e-learning relates to conventional and traditional forms of learning. I think there was a time when some thought that e-learning would replace conventional learning. But the community’s understanding is now this is not the case. But it is also the general view that e-learning will supplement and complement traditional forms of learning. There is more to higher education, for example, than merely sitting in front of a computer screen.’ (Sir Howard Newby interviewed in *JISC Inform*, Winter 2005).

Many organisations got their fingers burned in this period, and unfortunately many seem not to have learnt the right lessons. Like moths to a flame, politicians and managers are drawn to the illusory prospect of e-learning reducing costs in the education sector. As a result, money continues to be spent in the wrong places, creating ever more ‘content’ and infrastructure – because this is easy. The really tricky area is to address the process of teaching and learning itself. Technology is not central to the control of costs, but developing educational and institutional expertise certainly is.

3.5 Using the flexibility grid – deciding how flexible you want your course to be

The flexibility grid can be found in Appendix 3. As you will see, it is a simple adaptation of the basic model of flexibility that we presented in Table 2.2. We have introduced the idea of a range of flexibility for each dimension and given some examples, and have also left empty columns for you to fill in. We would stress that the examples we have given are not meant to be authoritative, but are intended to be illustrative – you can change them to suit your situation. The most useful thing about this grid is that it gives you a way in which to share your ideas with others. We used the grid in helping staff involved in seven very different programmes of study at UHI and the University of Dundee to describe what they saw as the degrees of flexibility

in their individual programmes. Obviously, there is a degree of subjectivity in such a self-audit tool, but the action of analysing, recording and sharing that it involves is a very useful development exercise. A helpful further step we would suggest you consider is to involve students and get their views on the degrees of flexibility on offer.

The grid can be used to help to decide and articulate what type and degree of flexibility you want to aim for. In this sense, the model and grid can be a tool to guide an implementation exercise by helping to develop a target to aim for and how to attain it. However, there is one question that this grid and indeed the overall model we are developing do not answer (although they may help), and that is the hardest question of all in education – why? There is an old proverb which says that the simplest questions are the best, and this one is certainly in that category. Where can we look for some guidance? As Ramsden (1992) observes about teaching in HE in general:

‘Half the difficulty with doing it better is knowing what the real problem is.’

We suggest that it is well worth taking time to consider your own situation, what degree and type of flexibility may be needed, what may really be possible and why you are considering this in the first place – ie what are the drivers? We provide a bullet point list below to help in getting you started on answering these questions. But before that we need to return to an examination of the question ‘why?’. This might seem like an unnecessary and time-wasting exercise with obvious answers. As Ramsden observes, busy academics, heads of departments and managers will tend to respond: ‘Don’t give me theory: just give me something that works’. It is tempting to try to supply the answer to this request, but we would agree with Ramsden that this approach is roughly the reverse of the right way to go about things.

To help us to answer this question we suggest that after reading this guide you should consult another guide called *Effective networked learning in higher education: notes and guidelines*, produced by Professor Goodyear and the Networked Learning in Higher Education Project at the Centre for the Study of Advanced Learning Technology (CSALT), Lancaster University (Goodyear et al, 2001). We refer to it in several parts of this guide and recommend it highly. The authors make the very important point that deciding to implement a change like e-learning or flexible learning is a major undertaking that has very large implications. So thinking about this question of ‘why?’ at the start is essential, and asking basic questions about the purpose of your educational provision and your institution, both now and in the future, is vital. In the diagram we have reproduced from the Lancaster guidance (Figure 4.3 below), the elements which would help to answer the question ‘why?’ would be ‘philosophy’ and ‘organisational context’. As the Lancaster guidance points out, carrying out this kind of exercise at the start helps to reveal differences in outlook, assumptions and values that, left unattended, can wreck the whole exercise:

‘But we would claim that *some* attention to the enacted philosophy of an innovative teaching project is required, at least in start-up and self-evaluation activities. Deep and unexplored philosophical differences within a team can lead to fatal divergence in the day-to-day operational work. It is not uncommon to find some members of a team believing that learners are poor at organising themselves and learn best by being fed information in small amounts, while other members of the team want to promote active, student-managed learning. The sooner such discrepancies are found, discussed and reconciled, the less likely is catastrophic failure.’ (Goodyear et al, 2001)

The collapse of UK e-U would be a good example of this failing.

3.5.1 Reasons for changing to more flexible provision

The drivers for such change can be many and varied. Here is a list to get you started thinking about them; your situation may produce additional drivers:

- student demand for flexibility of time, place and study mode (know your market)
- need to reach new markets, for example through flexibility of time and place (declining/static student numbers)
- government policy push
- part of the institutional mission
- funding opportunities
- management led (top-down)
- enthusiast led (bottom-up)
- shortage of classroom/campus facilities
- making more efficient use of existing staff resources
- increasing ubiquity of Internet access.

3.6 Creating educational designs to support flexibility

Being able to create and share educational designs for our courses is an important foundation stone for introducing flexibility. Currently, not many teachers do this, and nor are they required to do so. Current practice might be characterised as the 'teaching as telling' scenario, which is consistent with the 'subject specialist' model of amateur teaching that has historically dominated HE in the UK. The associated scholarly culture that 'trickles down' into the student experience is often one of isolated, individualistic and competitive activity (Crook, 1994).

The experience of students in this kind of environment is often unsatisfactory. Typically, a student on a course passes through the hands of different lecturers all teaching from their own notes, not working as a team from the same 'script'. This has the effect of fragmenting the learning experience and subject matter. It also places a higher load on the student than is necessary, and presents obvious barriers to non-traditional students. It is, however, all too easy to criticise this situation. There are many reasons for the tenacity of such traditional models of teaching, including, ironically, attempts at reform by introducing business models into the public sector.

3.6.1 Important planning and design decisions

Being able to abstract and share our educational designs is a key component of flexible teaching. Of course, teaching and design activities can only take us so far. We need to think about what the learner may be doing, and all of this is informed by the underpinning educational philosophy at work. It is worth pointing out in passing that moving to the use of flexible methods and the now closely related e-learning techniques forcefully brings to the surface the good and bad aspects of that underpinning philosophy. For those of us new to this area, or perplexed by it, here are some important points to consider.

- The primary difference involves thinking more about designing and managing the activities of the students rather than the course content.
- In technology terms you are probably best to plan to design for a mixture of on-line and face-to-face approaches – the so-called 'blended learning' approach.

People tend to not learn well in a totally isolated manner, and nor do they have any great desire to do so.

- Being sustainable and scaleable tends to involve a move from teaching as an individual based in one institution to working as part of a team who share their teaching materials, who may be based in more than one institution, and who only see their students occasionally – quite big steps for a lot of us.
- Much of what you already know about teaching your subject is useful for designing flexible courses. But remember that it is best not to try to reproduce exactly your existing face-to-face teaching activities on-line, or in other ways. You need to find new ways of achieving the same outcomes.
- To be done effectively, flexible and distance learning needs a fair bit more attention in the design phase, and involves us in thinking more about what our students are going to do and the possibilities open to them which we might provide – and their implications. One way to look at this is as if we are writing a ‘script’ of activities for our students (and teachers) to follow. By necessity this involves us revealing a lot about our own ideas of what constitutes effective teaching and learning of our subjects. This can lead to feeling a bit exposed at first, which is another good reason for working in a team. A good tip is to get a colleague to ‘walk through’ your educational design and see if they can spot inconsistencies and contradictions. In fact, testing and evaluation in this way are very important.
- Don’t forget that the use of print is still a very valid part of the media mix for flexible/on-line teaching. Be careful in your course design about planning for the transfer of printing costs to students – it’s not a very inclusive practice. Students young and old dislike reading lots of text on screen: it’s an ergonomic nightmare, and so they hit the print button. It’s quite feasible to structure an entire flexible learning course around one or two well-chosen textbooks.
- The use of compulsion in course design is not a very popular thing to own up to, but it’s worth reminding ourselves that there is a degree of compulsion in most of the arrangements that exist between students and educational providers, such as attendance requirements and assessment methods. A good example of this type of approach working well in practice is a course designer who knows that her students would be overwhelmed if they saw all the study materials at once. In this scenario, study materials and tasks are released in manageable chunks to the students, which may be on a weekly basis with students having to visit the virtual learning environment (VLE) to get the next instalment. This is a chosen limitation on flexibility for a good pedagogic reason, and it ensures that students visit the on-line environment at regular intervals.
- Clearly stated teaching aims and learning objectives or outcomes, along with assessment criteria, are very important and a key issue that students have with all courses. Particular attention should be given to drafting assessment criteria so that they are clearly understood by students (and staff). Nothing tells a student more about the educational values and attitudes of a department or institution than its assessment methods. These areas present challenges to us all. Jennifer Moon has written a very useful guide to this difficult process, called *The Module and Programme Development Handbook* (Moon, 2002), and this nicely complements the work of Ramsden (1992) on the subject of evaluation.
- A very important factor to consider is the current level of understanding of your students, how much support they will need, and how much independent self-directed learning their current stage of development might reasonably bear. In

other words, adopt a realistic and appropriate student model (see the student profile tool in Appendix 9).

- Create teaching plans and divide them into weekly or topic chunks (see the blended learning template in Appendix 1, which describes what the teachers and students do, when, with whom and what resources they use, and relates to the teaching schedule or syllabus). Produce tutor notes to enable an academic colleague to teach the same module – ie the tutor notes are there to enable a tutor to teach the module. ‘Chunking’ your courses in this way makes it easier to recombine the chunks and reorder them for your students.
- Currently, the UK has a serious shortage of design skills for flexible learning. You might think that a form of teaching which could be dubbed as ‘industrial’ might provide students with a poor-quality learning experience. Yet the OU is rated highly in this regard and, interestingly, at the Australian USQ campus students often opt for the distance-learning version of a module because they perceive it to be of higher quality. Designing for efficiency and economy typically involves greater investment in the design and development phase (as in mass production), which is currently beyond the resources of many HE institutions, both skills-wise and in terms of management. But this need not block development or limit our ambitions, which should be for high quality, effectiveness and efficiency. A good way forward in this difficult situation is to choose one or two courses, build expertise, learn as you go, and scale up the operation with increasing experience and confidence. Two things are vital for this course of action to succeed: good self-evaluation to make sure you are learning the right lessons, and senior management buy-in with policy action. An OU module typically runs for seven years without major revision in order to pay for its costs. In contrast, a typical campus-based module is ‘owned’ by an individual not a team, and is changed and tweaked to reflect that individual’s changing interests – or boredom thresholds. Laurillard (1994) contends that undergraduate teaching involves bringing students up to a certain level and includes little that is new in the subject domain, so a linkage with research is not really that necessary – a common argument for maintaining the status quo. It is quite easy to design a course in such a way that it runs unchanged yearly, yet has a ‘placeholder’ for new features about the subject.

3.7 The role of resources

Don’t fall into the trap of thinking that you have to make lots of web pages in order to ‘do’ flexible learning, or commission lots of fancy interactive multimedia. If you do, fine, but that’s not the end of the story; it’s just the start. And before we go any further in this area, it’s important to emphasise that we should always start by seeing if we can use or adapt existing resources, so start with a visit to your library. A common mistake in this area is to assume that we no longer need libraries, since there are growing on-line collections of digital resources that can be used for teaching. However, your librarian might be able to point you in the right direction to more relevant resources and can advise you on terms of use.

As a rule, you should only think of authoring new content as a last resort – remember that the ‘value’ in flexible learning (as in face-to-face teaching) is in the teaching and interaction with students and creating the right conditions in which they can learn. It is a common mistake to equate the creation and delivery of content with teaching (both on-line and face-to-face) – it is not the same. Do not be afraid to use textbooks and third-party resources to support your e-learning content strategy; this is very common in the e-learning ‘hotspots’ of the USA and Australia. Following this strategy allows you and your team to concentrate on teaching and developing your students’ understanding – and avoids getting sidetracked into content creation.

The commonplace error that 'the content is the learning' really just represents a still-common idea about teaching in HE. This is what Ramsden (1992) describes as the lowest form of teaching in HE: the pushing of information at passive consumers, sometimes 'jazzed up' with a bit of technology. Of course content is required in HE learning, but it has to be accompanied by activity and interactions with the teacher and often other students. If we see teaching generally, and on-line in particular, as a process or system that consumes or uses content during a course's life cycle as learners pass through it, we move towards a better understanding of the role of content in supporting teaching and learning.

It is quite possible to have successful flexible learning modules that are 'content lite'. An example of such a module is one that references extracts from a textbook and directs students to read them on a weekly basis, and also provides links to relevant public websites such as government legislation or free public collections. Students are given tasks to do individually and collectively, and they receive feedback from each other and the teacher. Seems too simple doesn't it? Yet these modules exist in UHI and elsewhere and students actually learn from them – the value is in the design and the teaching. If you are on a tight budget, this model has many attractions. Sharing such a course entails producing items such as teaching aims and learning outcomes, describing the teaching values and activities; a teaching plan with tutor notes, for a tutor to teach from; assessment criteria and worked examples; and sample feedback to students for common problems.

3.8 Sustainability

Sustainability is something we have not often thought about in mainstream teaching. But because flexible teaching and learning is a move away from what is currently considered the mainstream and is frequently operated on a separate basis in our institutions, we have a greater need to think about how we can keep it going. Here are some useful questions to consider.

- Can the module be run repeatedly without major alteration (for efficiency), for several years?
- Is there going to be enough continuing student demand to cover the costs?
- Will the fees/income cover the costs of operation?
- Do you know the real costs of operation? Mainstream course costs are often far from transparent or even discoverable; they are buried deep in an institutional accounting system and so not available. Flexible courses tend to be 'bolted on' and may be more visible to the 'bean counters', and hence are an easy target for cuts.
- Is the teacher workload realistic? Does it rely on enthusiasm and commitment? If so, what happens when that runs out or people move on?
- Can the module be taught without the original author?
- It is important to think about continued access to any linked learning resources and whether they are copyright cleared for the period. Is a continuing institutional subscription needed for any linked electronic materials?
- How self-contained is your course? Is it connected to other courses that might change? Can you design your course so that it has no dependencies?
- Where are the materials and supporting notes going to be stored?
- What arrangements do you have for course evaluation, and how does it feed back into the operation?

- What arrangements do you have for course maintenance and redesign?

Being able to answer these questions implies a well-developed evaluation framework that can feed back into the planning process.

3.9 Using the QAA guidelines

QAA provides distance-learning guidelines that are very useful, and it makes excellent sense to incorporate them into our design, development and delivery activities. If we do this, we make the self-audit process for quality assurance much easier. The guidelines can be found at:

<http://www.qaa.ac.uk/academicinfrastructure/codeofpractice/distancelearning/default.asp>

We recommend that they become part of the toolkit of anyone undertaking flexible learning and e-learning.

4 Making it work – challenges to existing organisational structures and cultures

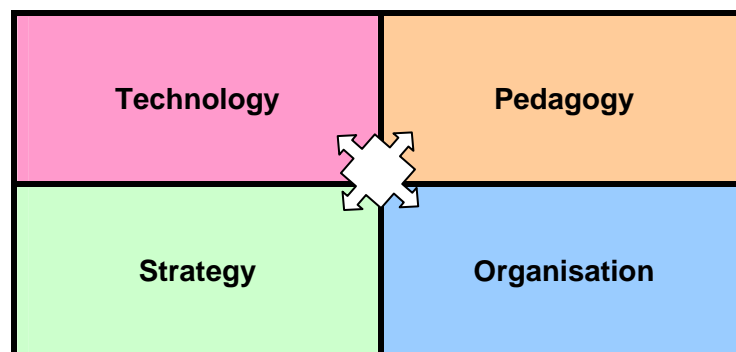
4.1 The four main components of flexibility

Four main components are required to support flexibility:

- technology
- pedagogy
- strategy
- organisation.

These components are really the building blocks for providing flexibility, both in learning and in teaching. They all need to be addressed and they are all inter-related (Figure 4.1). We expand on this topic in the following sections and make some observations about the components and their relationships.

Figure 4.1: The 'building blocks' of flexibility



4.1.1 Technology

Technology is best seen as an enabling infrastructure that needs to be reliable, adequate and usable (networks, VLEs and so forth). The technology must not be seen in isolation or as an end in itself (a tendency among IT service departments). It is essential to see technology in the context of users and an integrated system that works with the other three components of flexibility. Goodyear et al (2000) in *Effective networked learning in higher education: notes and guidelines* make the interesting and challenging observation that it is possible to deliver this kind of flexible learning using a 'minimalist' technical approach, as long as you have the educational expertise to support it. There is plenty of anecdotal evidence that this is just what some HE and FE teachers and departments are doing with email, free discussion boards and the like – often outside existing 'official' institutional administrative and technical structures, which are perceived as being too slow, inadequate or unresponsive.

4.1.2 Pedagogy

Pedagogy is usefully defined as the 'art and science' of teaching. We have already mentioned some of the new pedagogic skills and approaches that are required to support flexibility (Section 3.6). In addition, we can usefully employ the idea of 'pedagogic approaches' to develop a set of categories that can be used to describe and measure flexibility, such as:

- course organisation, administration, planning
- lectures and other instructor-led activities
- self-study activities for students
- major assignment activities (high stakes)
- testing and evaluation, especially to determine marks for a course
- communication on the course.

In addition to the pedagogic approaches referred to above, there is a useful concept of the overall model(s) of teaching and learning that may underpin the approaches which might be adopted and justify them. Our preferred and recommended models of teaching would be those based on the work of Paul Ramsden (1992) and Diana Laurillard (1994) because of their clarity, intuitive appeal and ability to incorporate many pedagogic models, support analysis and enable sophisticated approaches to teaching. We explain these models below and in the Appendices.

Ramsden introduces three theories of teaching in HE – which also have application in FE – that need to coexist and build on each other to supply a complete learning experience. They are:

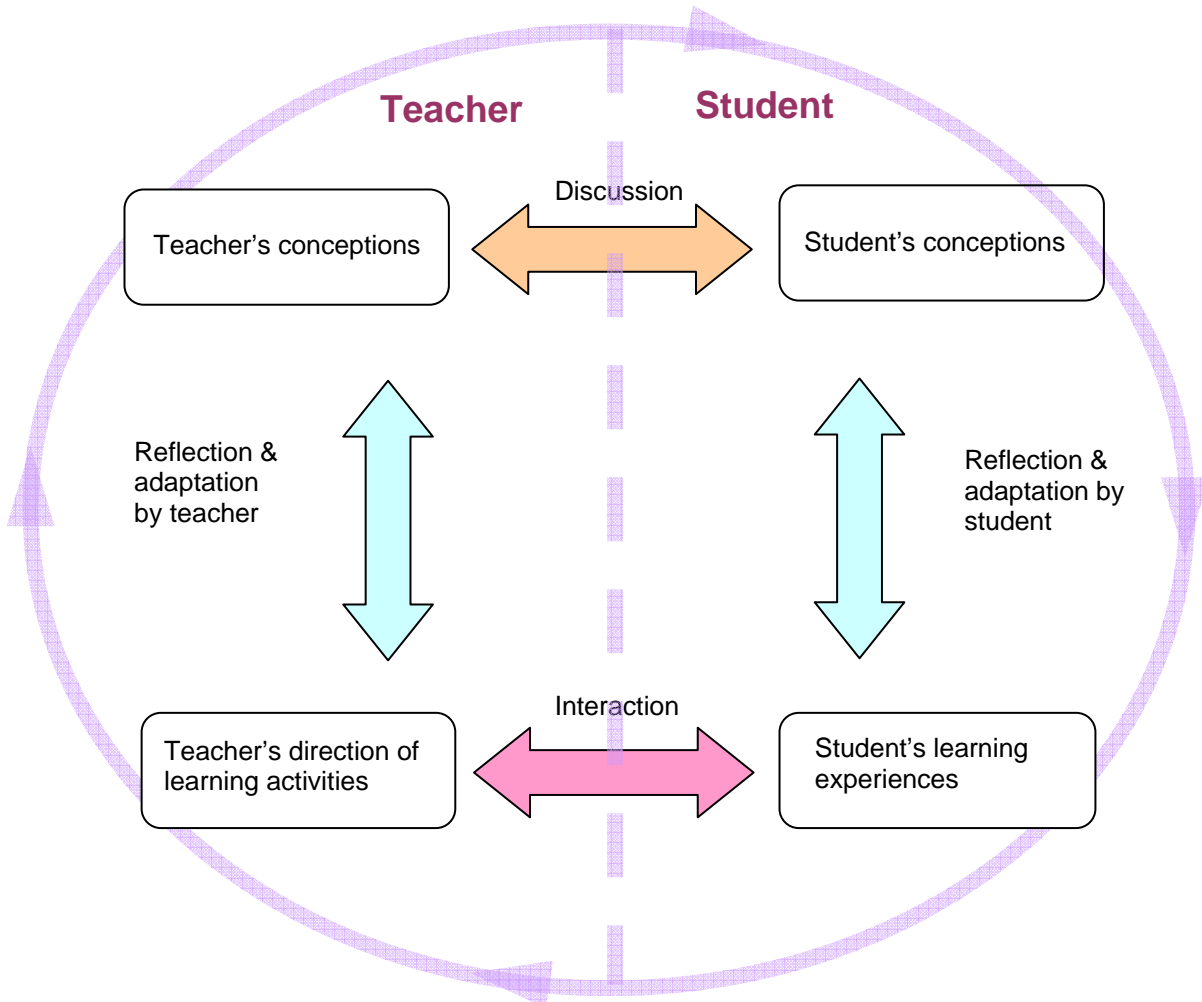
- the design, delivery and organisation of information and content
- the design, organisation and management of student activities
- the interaction with students and adaptation of teaching activities to make learning possible.

In *Learning to Teach in Higher Education* (1992), Ramsden develops his ideas and provides some well-argued, clear and (in our opinion) passionate ideas for improving the quality of teaching in HE. His work on design, assessment and evaluation is particularly useful and would be an excellent preparation for reading the very helpful *Module and Programme Development Handbook* (2002) by Jennifer Moon. A more detailed discussion of Ramsden's theories is presented in Appendix 6.

Diana Laurillard's conversational model of instruction builds on and extends that of Ramsden. It should be noted that this model is intended for HE, and is derived from Pask's 'conversational' theory of learning (Pask, 1975) and her own stress on the observable aspects of teaching and learning (ie a phenomenographic approach). Like the work of Ramsden, Laurillard's model is both intuitively attractive and capable of considerable sophistication. It serves as a good foundation for analysis, design and evaluation of teaching activities and courses. From it she has developed a 12-stage model of teaching and learning which covers the key points in her model of the instructional process. Figure 4.2 summarises Laurillard's model; a more detailed diagram containing all 12 stages appears in Appendix 6.

Figure 4.2: Overview of Laurillard’s conversational model of teaching showing the basic teacher/student interactions set within the overall ‘learning flow’ indicated by the circle and arrows

Laurillard’s model of instruction concentrates on the observable interactions between tutor and student (note that ‘tutor’ can be a human agent or a learning resource)



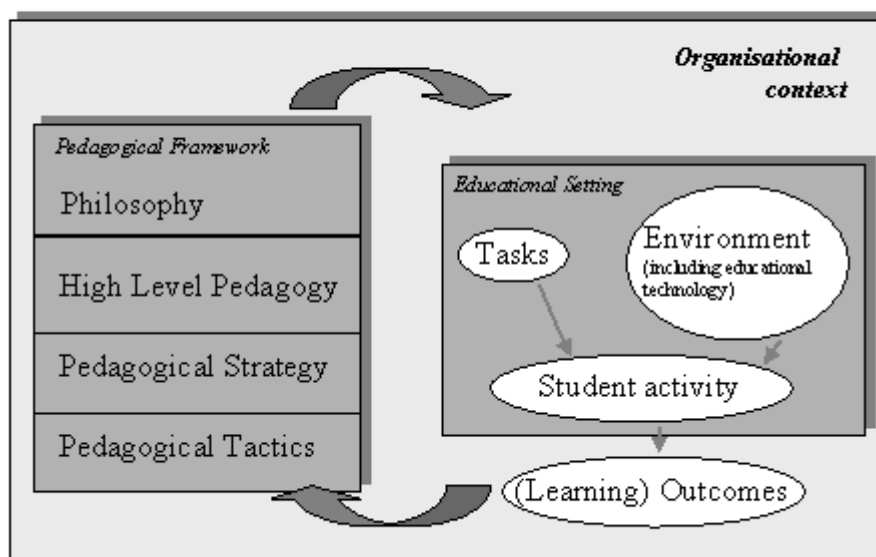
which takes that role, such as a text, a simulation or a video). She rejects the ‘classical’ transmission of abstract ideas (which is still widespread in HE) and instead stresses the need for students to learn through experience. She puts the emphasis on the mediated and conversational nature of learning, after the work of Vygotsky and Pask (for more information, see <http://tip.psychology.org/pask.html> and <http://tip.psychology.org/vygotsky.html>).

At this point it is worth mentioning that very useful guidance for implementing e-learning at institutional and individual level is provided in *Effective networked learning in higher education: notes and guidelines* (Goodyear et al, 2001), as it deals with many of these issues in detail. Produced by Professor Peter Goodyear and the Networked Learning in HE team at the Centre for the Study of Advanced Learning Technology (CSALT), Lancaster University, it was commissioned by JISC through its Committee for Awareness Liaison and Training (JCALT). This guide is widely used in the UK and abroad and is well regarded by those concerned with the pedagogy

aspects of e-learning. It is free and is highly recommended, and can be found at this web address: <http://csalt.lancs.ac.uk/jisc/>

The guide gives a useful diagram (Figure 4.3) for describing the relationships between the high-level aspects of pedagogic models and frameworks and the practical work of teaching. The Lancaster team make the observation that it is not often that lecturers/teachers and institutions think about the pedagogic models and philosophy of what they do, but that it makes very good sense to do so before embarking on the kind of major changes involved in adopting flexible learning and e-learning. More detail explaining the components of this framework is available in *Effective networked learning* at the web address referred to above.

Figure 4.3: Pedagogical framework, educational setting, organisational context (reproduced from Goodyear et al, 2001)



4.1.3 Strategy

The difficult business of introducing change into large, complex organisations is increasingly seen as the main issue in flexible learning and e-learning. We have seen many instances where well-thought-out pedagogic approaches and strategies using tried and tested technologies fail because people would not or could not use them. Without addressing these implementation issues at the level of the institution we shall be restricted to staying at pioneering work at ground level. To progress we need to understand the context; have an effective implementation strategy which deals with management and policy issues as well as a method for involving lecturers and teachers, using incentives; and effective management. This process will play out differently in different contexts.

4.1.4 Organisation

The institutional framework affects the other components (technology, pedagogy and implementation). Understanding the management structure (real and imagined) of the institution is clearly vital, but so too is the need to see the institution in terms of its requirements, its component cultures and the positions of key people – this is essential for any successful change.

4.2 Lessons learnt

Collis and Moonen (2004) have some good advice about introducing flexible learning, based on their own experiences. The following is a short summary.

- Be clear and specific – in particular, avoid hype and generalisations. Express goals in measurable forms so that progress can be evaluated.
- Flexibility implies a move to greater student autonomy and responsibility. Make sure that the pedagogy and administration can foster and support this move.
- Recognise when a move towards flexibility becomes inevitable.
- Have a plan for change, and remember that change in these institutions can take a long time and be an iterative process. Be on the lookout for unintended consequences and adapt the plan accordingly.
- The influence of key people is critical.
- Have support and development activities and materials just in time for the task in hand – without a practical need, staff are unlikely to learn.
- Make sure that any use of technology is not restricted to enthusiasts.
- Don't try to attempt too much at once.
- Try to adopt technology systems that can support a wide range of flexible learning – this makes adaptation easier.
- Keep the pace of change manageable, as overloading lecturers, teachers and service departments can be counterproductive.
- Think about using students as an educational resource – they can help to produce new learning materials for the course.
- The role of lecturers and teachers moves from didactic towards that of activity planning/designing, monitoring and quality control of a pre-made course. Managing assistant tutors is an important development.
- Course design should concentrate on creating learning activities and opportunities. Try to use existing course content and learning resources as much as possible.
- Try to measure the right things – people often measure what is easy, not what is useful. Retention, progression, student results and meaningful student feedback are good, but so too are ratios of students to staff, cost of learning resources and student time spent on tasks.
- Technology will not save time or money in the short term.
- Identify the factors that matter most to the different stakeholders. Measure the amount of relative change in each factor to evaluate progress.

4.3 Going mainstream

It is common for new initiatives to be 'bolted on' (Twigg, 2005) to existing structures, and this is often made possible by extra funding or enthusiasm. A common outcome is that once the funding stops or the enthusiasts move on, the system reverts to ingrained norms of practice. To avoid this tendency to institutional entropy we need to (a) understand how the organisation actually works, and (b) intervene in it to achieve sustainable change. Currently, most activity is in the bottom-up approach; more needs to be done in a top-down manner. A good foundation for this is understanding the views and concerns of the different actors and stakeholders in a

more holistic and integrated manner. To do this well, it helps greatly to be able to have a shareable mental model of how we think our institutions work. By doing this we have been able to develop analysis and planning tools. We describe the process in an article in Appendix 11, which provides some web links to working examples of such tools in the TrustDR project (looking at the legal aspects of managing e-learning).

4.4 Developing an organisational model

4.4.1 Three important levels of the organisation

As well as the all-important learner's perspective described earlier, three other important perspectives of actors within the institutional provider need to inform our exploration and understanding of flexibility. These are:

- 1 institutional management (IM) – the senior figures directing the strategy and direction the institution is following
- 2 operational management (OM) – those in charge of organising the necessary resources and implementing the strategy within the constraints of the institutional context
- 3 teaching and learner management (TLM) – those who are responsible for carrying out at a practical level the actions required by the strategy.

As you can see from the above descriptions, this hierarchy of actors has to deal with increasingly detailed operating contexts as we move towards the teaching level. As the TrustDR project's literature review makes clear, the successful implementation and 'mainstreaming' of flexible learning requires these different institutional levels to be in alignment and to work as a coherent whole (Normand and Littlejohn, 2006). Based on this solid foundation we have built our model.

For now, the main point to be made is that these different levels in an institution naturally tend to have different perspectives or 'filters' on the process of flexible learning:

- 1 IM is looking for 'big picture' items like retention and progression figures, exam grades and costs
- 2 OM tends to see this as the delivery of 'product' and relates it to departmental budgets and targets, quality control and the type and costs of learning materials
- 3 TLM is concerned with mechanisms for delivery (face to face or on-line), the balance between guidance/facilitation roles and instructions, assessment procedures and type of learning resources.

To develop our model we have taken the work from the project's literature review and built on it by adding the work of van der Klink and Jochems (2004) regarding the successful implementation of e-learning, which we think applies equally well to flexible learning. They suggest adopting four perspectives at each level, as described below.

4.4.2 Four different perspectives across the organisation

A technological view

This perspective takes account of the use of technology in such a way that it can support actors at different levels to carry out their functions and achieve their targets. Until now, the premise has been that supplying staff and students with an adequate infrastructure would be enough to improve educational programmes; this has not been upheld. Technical aspects have been focused on without understanding how

they would support pedagogy and strategic goals or taking into account the organisational context.

A strategic view

The strategic perspective focuses on organisational strategy and business processes that have to occur to support the change, and how embedded they can become in the organisation. E-learning cannot be regarded as an isolated issue – it is expensive and impacts on a large number of institutional processes, and good reasons are needed for implementing it. Awareness of what might realistically be delivered is needed, and clear goals are required in relation to internal strengths and weaknesses and external threats and opportunities.

A pedagogical view

This view is needed to determine the sensible use of the technology. A considerable number of questions have to be answered, ranging from the extremely practical to the more philosophical. Van der Klink and Jochems (2004) recommend starting by rethinking views of learning, instruction and teaching, to encourage staff to think beyond their current frameworks. Interestingly, Goodyear et al (2001) also recommend this approach and provide a very useful discussion on it, which we would recommend highly. It has also been adopted by the University of Southern Queensland in Australia (Postle et al, 2003).

An organisational view

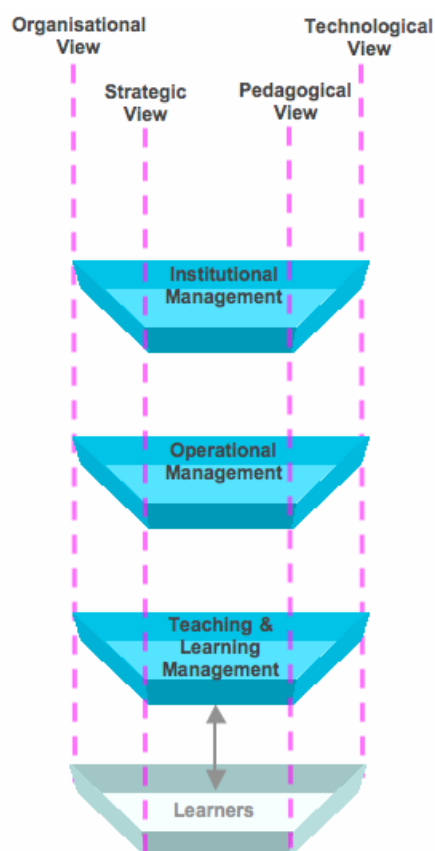
The organisational perspective includes the ability to identify and evaluate the interplay between personal, departmental, cultural and professional viewpoints played out within an institutional context. The introduction of e-learning is either an innovation – usually a bottom-up and non-sustainable activity, which accounts for much of the present scene – or a transformational change requiring top-down involvement and affecting all aspects of the organisation. In the first scenario, little changes – although tensions will increase but be unresolved. In the second scenario, the roles, responsibilities and relations of the departments and individuals in the organisation are strongly impacted on and will change.

4.4.3 The model

On this conceptual basis we have come up with a simple yet comprehensive organisational model which is intuitive and can be easily adapted and extended to describe most educational institutions. This organisational model might also usefully fulfil an analytical and diagnostic role for those tasked with implementing flexible learning in an institution.

Figure 4.4 illustrates the model. The top two levels might be described as ‘flexible delivery’, with ‘flexible teaching’ below; ‘flexible learning’ is the perspective that the learner brings to the combined institutional offerings. The fact that the three levels of institutional organisation are in alignment indicates that they are working well and coherently to deliver flexible learning opportunities – the vertical lines indicate the channels of communication of the four perspectives. The significance of each of the perspectives would naturally vary across the different levels of any institution. But as with our model of flexible learning ‘dimensions’, this organisational model is potentially useful as an internal communication tool, and more work is planned to develop it. See Appendix 11 for more about this model and its development into analysis, planning and implementation tools.

Figure 4.4: Institutional perspectives on flexible learning



4.5 Return on investment – the political economy of flexible learning

4.5.1 What is (and is not) measured and why

The 'marketisation' of parts of the public sector has had many unintended side effects. Many of those managing educational institutions are encouraged by the prevailing political climate to use the vocabulary of enterprise, with terms such as 'customers' (students) and 'value added' (learning), 'business plan' (new course proposal) and 'business processes' (administration). This level of mystification can make rational analysis and discussion difficult, and fits nicely into traditional patterns of institutional obfuscation that make change difficult. Thus the introduction of business rhetoric may become a tool of those determined to resist change and accountability. It is notable that the ability to measure the actual activities of institutions is mainly restricted to crude budgetary items. In fact this budgetary focus is often rather coarse-grained and functions only at the level of the department and above.

Few, if any, institutions are able to track and describe the cost of a single course or the cost per student, or the efficiency of teaching staff. This situation understandably makes analysis, evaluation and planning quite difficult. Interestingly, Ramsden (1992) makes a powerful case for the role of careful, thoughtful evaluation in improving teaching, in order to provide useful feedback for educational development and improvement at an individual and institutional level.

The situation is further confounded in HE by the loose and decentralised organisational structures, which can make communication, planning and coordinating change difficult. In this context the adoption of flexible and e-learning is usually an add-on to existing structures, when what is needed is a structural change to be able to take advantage of new technology and teaching methods. Not surprisingly the result is often not satisfactory, as van der Klink and Jochems (2004) put it:

‘The current situation can be best described as high-level ambitions with poor implementation.’

In relation to e-learning in particular the growing realisation is that it is not very sensible to invest in learning technology and not change the way we work. It is a bit like a company building a new production line and continuing to use handcraft production techniques. Yet many of our institutions and teachers find themselves in this situation. But this is not surprising: tradition, dominant groups and vested interests can delay and obstruct the adoption and dissemination of new knowledge, as the history of science shows (Kuhn, 1996). Implementation is likely to pose some significant challenges in the form of institutional and professional change. As Mayes (1995) reminds us:

‘Education is a social and political system, and the checks and balances that keep the system working may not be shifted by any technology.’

So we should not be under any illusions about the scale of the task involved in implementing flexible learning at institutional level; it requires high-level strategic engagement in a sustained, coherent manner. One of the current tendencies in our institutions is to avoid this engagement (effectively a type of ‘displacement activity’) by concentrating on comparatively trivial problems such as the production of learning materials content, or debating the relative values of open-source VLEs versus commercial products. This is understandable, as planning for introducing different employment contracts, introducing team teaching and sharing of teaching materials, making the different service departments talk to each other, and ensuring that all the administration processes and service units can keep up with the needs of a flexible learning system are not what many institutional players and managers would find an attractive option.

Hence considerable political skill and determination are required by those in management positions in order to implement flexible learning successfully, as well as a clear, well-informed strategic vision to guide it. This activity and – most importantly – the required targets, in clearly expressed forms, need to be factored into the development of institutional teaching, learning and assessment strategies. These strategies need to be expressed in clear, direct terms and linked to targets which are actually evaluated, rather than the rather anodyne statements that are sometimes produced.

4.5.2 The contradiction of the low status and high value of teaching in HE

Teaching in HE has traditionally been accorded a fairly low status, yet for most institutions income derived from teaching is the major source of institutional wealth, with figures of 80-90 per cent and above being not uncommon. So for most universities, teaching is the de facto core business activity. Yet the ‘marketisation’ of research in the form of the Research Assessment Exercise (RAE) has had the effect of diverting institutional management away from teaching into the pursuit of a dwindling pool of research money. As a result, the already low importance and prestige attached to teaching in academia have dropped even further. As financial constraints bring this reality to the surface, managements are increasingly realising the strategic deficit in their position (Sampson, 2004) which is leaving them vulnerable to demographic and market change.

4.5.3 Developing a realistic model for measuring return on investment

Collis and Moonen (2004) make a persuasive case for moving away from the current concentration on coarse-grained financial data. They offer a useful discussion on the difficulties of choosing what to measure and the problems in arriving at meaningful conclusions in such a complex environment. They propose a more meaningful and useful set of measures which take into account the following perspectives:

- institutional management
- administration and support staff
- teachers
- students.

This topic is beyond the scope of our current guide, but we shall be doing further work on it for future versions and connecting to recent work in the UK and elsewhere.

4.6 Using action research as a feedback mechanism

Introducing flexible learning in this type of context is bound to be an iterative process, and it is important to be able to gather enough of the right kinds of information to guide those charged with implementation. Action research provides one way of getting the required information in an effective way to provide feedback loops on the process of change. You can find out more about using action research in Appendix 2.

4.7 Some conclusions on ‘making it work’

As mentioned above, more needs to be done on examining the ‘making it work’ aspect of introducing and sustaining change. As Mayes (1995) points out, our educational institutions are part of the wider political, economic and social web of our society, which is itself going through a period of rapid change, aspects of which are being contested. The response of our educational institutions so far to larger, more diverse numbers of students and fewer resources has been ‘more of the same’ (Twigg, 2005): larger lectures, longer teaching days, put notes on the web, create ever more ‘content’ (but not share and use it), use VLEs to mimic classrooms, continue to teach as individuals, and use expensive academics to teach at a low level.

As in any period of rapid change, the situation is often marked by contradiction, paradox, opportunities and threats to the various players. The path for those who want to change this situation needs some clear thinking, tact and patience, and is not for the faint-hearted. Here is some useful general advice from the economist J K Galbraith (2005):

‘I have learnt that to be right and useful, one must accept a continuing divergence between approved belief – what I have elsewhere called conventional wisdom – and the reality. And in the end, not surprisingly, it is the reality that counts...

...out of the pecuniary and political pressures of the time, economics and larger economic and political systems cultivate their own version of the truth. This last has no necessary relation to reality.’

With this general advice to guide us, we would recommend you to look at the guidance provided by Laurillard (1994) on developing an institutional framework. The guidance she gives is still extremely relevant and useful. Like Ramsden (1992), she stresses the need to take a holistic view, to see the institution as an interconnected ‘educational system’, and for that system to be able to learn about itself through proper evaluation of its own activities.

5 Sources and references

5.1 Recommended core list of further reading and resources

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Collis B and Moonen J (2004) *Flexible Learning in a Digital World* (2nd edition), Abingdon: Routledge and Falmer

Goodyear P and the Networked Learning in Higher Education Project (2001) *Effective networked learning in higher education: notes and guidelines*, CSALT, Lancaster University, commissioned by JISC and available at <http://csalt.lancs.ac.uk/jisc/guidelines.htm>

Kearsley G (1994-2005) *Explorations in Learning and Instruction: The Theory Into Practice Database* (web resource at <http://tip.psychology.org/>)

Laurillard D (1994) *Rethinking University Teaching*, Abingdon: Routledge and Falmer

Moon J (2002) *The Module and Programme Development Handbook: a practical guide to linking levels, outcomes and assessment*, Abingdon: Routledge and Falmer

Normand C and Littlejohn A (2006) *A model for analysis and implementation of flexible programme delivery*, Gloucester: QAA (includes a literature review)

Postle G et al (2003) *On-line Teaching and Learning in Higher Education: A Case Study*, by the University of Southern Queensland, Australia, available from the Australian Government website at: http://www.dest.gov.au/sectors/higher_education/publications_resources/other_publications/on-line_teaching_and_learning_in_higher_education.htm

Ramsden P (1992) *Learning to Teach in Higher Education*, Abingdon: Routledge and Falmer

Stiles M and Yorke J (2004) *Embedding Staff Development in eLearning in the Production Process and using Policy to Reinforce its Effectiveness*, Staffordshire University (<http://www.staffs.ac.uk/COSE/cosenew/embedding.pdf>)

5.2 General sources and references

Beetham H (2004) *Review: developing e-learning models for the JISC Practitioner Communities* (version 2.1), London: JISC (<http://www.elearning.ac.uk/resources/>)

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- SCQF (2003) *An Introduction to the Scottish Credit and Qualifications Framework* (2nd edition), Glasgow: SCQF (available at http://www.scqf.org.uk/further_information.asp)
- Shuell T (1992) 'Designing instructional computing systems for meaningful learning', in Winne P and Jones M (eds) *Adaptive Learning Environments: Foundations and Frontiers*, New York: Springer Verlag
- Stiles M (2005) *Introducing the Reuse and Repurposing of Content as part of the embedding of eLearning: A guide to good practice and problem areas in cultural, educational and organisational change*, Staffordshire University (available electronically as <http://www.staffs.ac.uk/COSE/X4L/SURFX4Lmain.pdf>)
- Stiles M and Yorke J (2004) *Embedding Staff Development in eLearning in the Production Process and using Policy to Reinforce its Effectiveness*, Staffordshire University (<http://www.staffs.ac.uk/COSE/cosenew/embedding.pdf>)
- Twigg C (2002) *Improving Quality and Reducing Costs*, London: OBHE
- Twigg C (2005) *Keynote Summary: Improving Learning and Reducing Costs – New Models for On-line Learning*, presented at the ALT-C 2005 conference, Manchester (<http://www.alt.ac.uk/altc2005/keynotes.html#carol>)

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Appendix 1: Blended learning template

Module title: Module ref no.	Week no.
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	A Teacher/tutor activity	B Student activity	C Teaching and learning materials and resources	D Teaching topic, concept, knowledge, etc	E Learning outcomes (whole or partial) supported	F Formative or summative assessment	G VLE service – or classroom requirements: content delivery, discussion, chat, private mail, test, share files etc
1							
2							
3							

4							
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1.1 Blended learning template user notes

The idea behind this template is very simple and similar to many lesson-planning tools. In particular, it is meant to support teamwork involved in developing learning designs and to help in providing documentation to help others to pick up a course and redesign it if necessary. It is intended that the user would alter this template to their needs.

The template can be used for different time periods, from a lesson up to a complete course. Obviously, longer time periods involve more top-level information, while a weekly template might provide more lower-level detail, and a 'class' or lesson template would be more concerned with detailed pedagogic activity and tactics.

The column headings break the teaching and learning activities down into related chunks and provide a way for us to plan and record our designs – or, if you like, to choreograph the actions of students and teachers in relation to the resources and services they are going to make use of.

The template only allows brief entries – a good thing in our view. The letters at the head of the columns and the numbers at the start of the rows allow us to reference any square on the grid (eg B1) to a Microsoft Word document, where more detailed information can be entered.

With this grid, the course reference number and any additional 'grid square' documents, we have a simple but useful design and reference system that can support individual or group work. Most importantly, it supplies a design archive for each course, to make maintenance easier.

Appendix 2: Using action research – an important aspect of understanding, evaluating and promoting flexible approaches to teaching and learning

2.1 ‘How can we do this better and improve our understanding?’ – the nature of action research

This brief guide to action research does not seek to replicate the many excellent texts and guides on the process of general educational action research. It notes the importance of action research to the development of an understanding of flexible approaches to teaching and learning, and gives some guidance on key steps and considerations. Further resources are indicated if you decide that this is a possible route for you to usefully pursue and integrate with a reflective approach to evaluation.

Carr and Kemmis provide a classic definition of action research:

‘Action research is simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out.’ (Carr and Kemmis, 1986, p162)

Many action researchers are drawn to this understanding of the term because it is firmly located in the realm of the practitioner and is tied to self-reflection. As a way of working it is very closely linked to the concept of reflective practice as developed by writers such as Schon (1983).

It is also perhaps important to think about what is not considered to be action research. Ferrance (2000) outlines in concise terms how we can think about this:

‘Action research is not what usually comes to mind when we hear the word “research”. Action research is not a library project where we learn more about a topic that interests us. It is not problem-solving in the sense of trying to find out what is wrong, but rather a quest for knowledge about how to improve. Action research is not about doing research on or about people, or finding all available information on a topic looking for the correct answers. It involves people working to improve their skills, techniques and strategies. Action research is not about learning why we do certain things, but rather how we can do things better. It is about how we can change our instruction to impact students.’

2.2 The importance of developing a shared understanding of flexible delivery

The flexible organisation of programmes, particularly those enabled by the use of technology, can have a level of complexity that is often underestimated and determined by implicit and explicit barriers and drivers. The main text of this guide to flexible learning unpacks some of these factors.

The development and implementation of successful approaches to flexible learning and teaching often depend on a team approach across traditional support and academic areas within an organisation, and to students’ and possibly employers’ actions outside the direct planned learning environment. Shared vision and understanding of the aims and objectives, learning environments, business processes, resourcing requirements and teaching and learning approaches can be more complex in this less-established delivery context.

Although not demanded by action research, it is important to involve a relevant team in any collaborative research or evaluation activity when seeking understanding of the processes and interactions that can be used to inform pedagogic effectiveness,

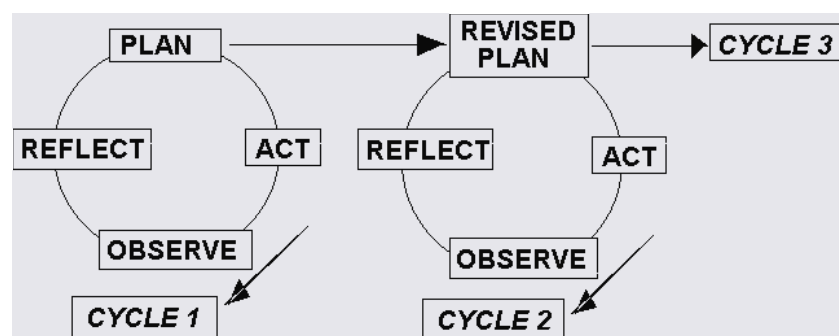
organisational efficiency and a positive student experience. The importance of a team approach to designing, developing and delivering flexible programmes is particularly rich in potential for improving our understanding of this area. Three interlinked perspectives of context, process and technology (Collis and Moonen, 2004) and the three-level management 'lens' model proposed by Normand and Littlejohn (2006) could, for example, be used to inform an approach to action research. This can identify useful collaboration and focus at a horizontal level, or in a vertical slice through the three management levels of institutional management, operational management and teaching and learning management.

2.3 Action research as reflective practice

Our area of interest and concern is with approaches that integrate action and reflection. The knowledge gained in enquiry is directly relevant to the issues being studied, and there should be opportunities for increased collaboration by all those involved in the research. Approaches to action research should assist practitioners to develop skills of reflective practice and help cross-organisational members to develop communities of enquiry, as well as contribute to wider shared understanding of important factors.

This form of action research adopts a methodical, iterative approach involving identification of problems, action planning, implementation, evaluation and reflection (Figure 2.1). The number of iterations necessary depends on context and need.

Figure 2.1: Action research as an iterative process (from Carr and Kemmis, 1986)



Action research puts educators in the dual role of producer of educational theory and user of that theory. This is both a way of producing knowledge about higher education and further education learning and teaching, and a powerful means of improving learning and teaching practice. No separation need be made between the design and delivery of teaching, the process of researching these activities, and reflective evaluation, thereby bringing theory and practice closer together.

2.4 How to get started on a project

Decide on a focus. The general idea may stem from considering a new idea or the recognition that existing practice falls short of aspiration. The question should:

- be a higher-order question – not a yes/no
- be stated in common language, avoiding jargon
- be concise
- be meaningful

- not already have an answer.

Develop a plan to gain insights. Who can best inform your area of focus? Get early involvement from the 'team' in planning a methodology. As action research is carried out in real-life situations, agree ethical considerations of involvement and confidentiality. Check your own organisation's policy on research ethics. What is feasible, reliable and capable of interpretation and analysis?

Collect and act on results. Using the information from data collection and a review of current literature, design a plan of action that allows you to make a change and study that change. It is important to alter only one variable, so that possible resultant changes are not too confused. Analyse the data by looking for patterns or themes across the evidence. What conclusions can you draw from the emerging picture of this particular situation?

Next steps and iterations: are there still outstanding questions and areas for improvement? How can you amend or extend the methodology to further inform actions?

Report on what you have learned. A key component of action research is sharing what you have learned. A number of less formal techniques such as posters, peer presentations, blogs or web reporting can be used, as well as the traditional publication routes. The dissemination of findings from action research concerning flexible learning is best shared in a spirit of teamwork, evaluation and planning for future enhanced understanding and action.

2.5 Next steps – what is it about your experience to date of flexible programmes that you would seek to improve?

If you are new to action research, keep your enthusiasm and inherent interest in 'why' and 'how'. Contact someone in your organisation who is experienced in action research and can be a mentor, or can point you in the direction of suitable support.

The following resources give more detailed perspectives on getting started in action research.

Resources

Coghlan D and Brannick D (2000) *Doing Action Research in your own Organisation*, London: Sage

McNiff J, Whitehead J and Lomax P (2003) *You and Your Action Research Project*, London: Routledge

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Appendix 3: The flexibility grid

	Not flexible		Medium		Very flexible
Time					
1 Starting and finishing a course	Once an academic year		At the start of every term or semester		Any time
2 Submitting assignments and interacting within the course	Assignment deadlines fixed and set times for interaction		Assignment deadlines and times for interaction are within stated brackets of time		Assignment deadlines and times for interaction are negotiable
3 Tempo/pace of studying	Materials and tasks fixed – revealed on a weekly basis to students		All tasks and materials available to students at start; studying happens within broadly stated phases, allowing some leeway		Up to students
4 Moments of assessment	Fixed		Adjustable within limits		Negotiable with students
Content					
5 Topics of the course	Fixed		Some choice/options		Broadly negotiable
6 Sequence of different parts of the course	Fixed		Some variability allowed		Can be completed in any sequence
7 Orientation of the course (theoretical, practical)	Fixed		Mixed, to suit the subject matter and institutional		Students can choose the orientation that suits them

			constraints		
8 Key learning materials of the course	Fixed		Core materials with options, and students allowed/expected to use other materials		Students able to choose from a wide variety of sources
9 Assessment standards and completion requirements	Fixed		Choice of assessment methods allowed, with reference to stated learning outcomes. Completion possible by a number of routes		Assessment criteria and methods negotiable, completion possible by a number of routes
Entry requirements					
10 Conditions for participation	Fixed – a particular qualification or course is required for entry		A range of proofs of prior learning is accepted and accredited		No conditions on participation
Instructional approach and resources					
11 Social organisation of learning (face-to-face; group; individual)	Fixed, often connected to institutional patterns of lecture – tutorial – seminar – essay and so on		Some degree of choice and combination allowed		Course can be completed by a number of different routes which can be mixed and matched by students
12 Language to be used during the course	One language		One language with one or more options – usually a range of three or so		Available in a wide range of languages
13 Learning	Fixed, usually		Most courses now		Wide range of modes

resources: modality, origin (instructor, learners, library, WWW)	instructor and institution centred		have an on-line component, if only as web-link resources. Some degree of peer- to-peer instruction		of access to resources and types of resources, including peers and earlier cohorts' records
14 Instructional organisation of learning (assignments, monitoring)	Fixed – usually around an institutional regime		Can be determined to a degree by students, from a predetermined list of options		Can be designed and customised by students
Delivery and logistics					
15 Time and place where contact with instructor and other students occur	Fixed time and place according to a timetable		Some flexibility, within limits – often related to mode of access such as a VLE		Course can be completed without ever having to visit the institution or meet a tutor
16 Methods, technology for obtaining support and making contact	Fixed and restricted range – academic office hours, tutorials, departmental secretaries		Wider range, including on-line peer forums and email to specialist academics, and access to course tutors		Wide range and adjustable to suit students' needs, access to frequently asked questions (FAQs) and previous cohorts' work
17 Types of help, communication available, technology required	Tutor, secretary, institutional counselling, limited assessment feedback – face-to-face mode and print		Peer, academic and administrative support, study skills, more detailed assessment feedback, possible access to FAQs and		All of the preceding plus the ability to specify type and mode of support required

			previous cohorts' work – VLE on-line, email, phone		
18 Location, technology for participating in various aspects of the course	Fixed place – face to face		Blended – some face to face and some on-line work; different locations possible		Location and technology for participating can be negotiated
19 Delivery channels for course information, content, communication	Fixed – notice-boards in department and lectures		Mixture of face to face, on-line		Can be negotiated

Appendix 4: Benchmarking e-learning: an overview for UK HE

By Paul Bacsich

4.1 Introduction

There is increasing interest from UK HE institutions and sector agencies – HEFCE, the Higher Education Academy (HEA) and JISC – in the use of benchmark self-assessment toolkits by an institution and groups of partner institutions for analysing and comparing their level of good practice with e-learning. See in particular <http://www.heacademy.ac.uk/benchmarking.htm>

This overview document reports on work by the author which has analysed the main traditions and proposes a 'Pick & Mix' model which the HE sector is encouraged to discuss and refine. It is based on a number of more detailed papers by the author and other workers, and a bibliography is given at the end.

The document also summarises audience feedback from the workshop on benchmarking tools held at the ALT-C conference, Manchester, 6 to 8 September 2005.

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The main tools available for benchmarking e-learning that could be deployed in UK HE are:

- a The author's 'Pick & Mix' system, described later in this paper.
- b The National Learning Network (NLN) information and learning technologies (ILT) self-assessment tool – described in http://www.nln.ac.uk/llda/self_assessment/files/Self_assessment_tool_Guidelines.doc.
- c The 'e-Learning Maturity Model' work done for the New Zealand tertiary sector – see <http://www.utdc.vuw.ac.nz/research/emm/documents/SectorReport.pdf>
- d The 24 US Institute of Higher Education Policy (IHEP) 'Quality on the Line' benchmarks – described on pages 25 and 26 of <http://www.ihep.org/Pubs/PDF/Quality.pdf>.
- e The Australian HE benchmarks most relevant to e-learning described in the university-wide framework 'Benchmarking in Australian Universities' – see in particular benchmarks 9.1 and 9.2 in http://science.uniserve.edu.au/courses/benchmarking/benchmarking_manual.pdf
- f The US APQC/SHEEO e-learning benchmarks in 'Supporting Faculty Use of Technology in Teaching' – see the section 'STUDY KEY FINDINGS' in http://www.researchandmarkets.com/reportinfo.asp?report_id=42890

The 'Key references' section below provides bibliographic details and additional sources of information.

4.2 Summary of literature search

A wide range of literature was surveyed by the author in the period January-August 2005, including from the UK HE sector, UK FE sector, Australian and other Commonwealth reports, and several US reports concerned with distance learning

quality. A wide range of agencies and so-called 'benchmarking clubs' was also reviewed. Much of this work was reported on in Bacsich (2005a, 2005b). The main conclusions were as follows.

- There is a considerable amount of work on benchmarking in universities, but it is mostly oriented to benchmarking administrative processes; very little is directly about e-learning and only somewhat more is relevant. It was surprising how little was focused even on IT.
- The most useful work of direct applicability was that carried out by the National Learning Network. This was oriented to the UK FE sector and there are concerns in HE about its applicability without extensive reworking. It is at present not clear how this work is being taken forward in FE. However, this work could still be of interest to those institutions which are close to or cross the HE-FE boundary (UHI, University for Industry, HE colleges, HE in FE, etc) as a companion system to an HE-focused system.
- There is recent innovative and theoretically-based work being done in New Zealand and a case study of its applicability to a range of New Zealand institutions (especially projects within institutions). This has a theoretical basis not dissimilar to but more modern than that for the NLN work.
- There is a considerable amount of US HE work on quality and good practice in distance learning and e-learning, which can (with some work) be transformed into benchmark criteria. This corpus of material includes reports prepared by the Western Cooperative for Educational Telecommunications, the American Productivity and Quality Center (APQC) in collaboration with the State Higher Education Executive Officers and by IHEP entitled *Quality on the line: Benchmarks for success in Internet-based education*. This last, published in 2000 – which despite its title is more about good practice than benchmarks – is still useful.
- There are several useful recent surveys of benchmarking methodology, including one on the HEA site, one produced by the Learning and Skills Council (LSC) for English FE, and one produced on behalf of the Australian government oriented to HE. These will be most useful when universities decide to take steps towards setting up benchmarking clubs for e-learning.
- There is material from NHS studies of relevance, not to provide an alternative benchmarking scheme, but rather to inform and round out existing schemes.
- Any benchmarking club could learn from the existing clubs, noting that these so far have been oriented to improvement of administrative processes and do not seem to have considered e-learning. They also do not seem focused on competitive ranking and metrics. The clubs include the European Benchmarking Programme on University Management and the English Universities Benchmarking Club.
- There is very interesting benchmarking work for e-learning in English schools organised under the auspices of Becta (British Educational Communications and Technology Agency), but it would be a large leap and possibly premature to adapt it to the HE sector. The goal which might be wished for by the Department for Education and Skills of a trans-sectoral approach to benchmarking e-learning is likely to remain elusive.
- There are several other studies of benchmarking in wider applications than HE e-learning, and many other sources of input (including on the related aspects of quality and excellence) that could inform benchmarking activities, but it is the

author's belief that the ones above are the most fruitful for the purpose of benchmarking e-learning in UK HE.

4.3 Guidelines for any tool

These guidelines have been developed from the literature search and conversations with interested parties.

- The UK HE sector would not like a uniform sector-wide approach with published numeric rankings of named institutions.
- There are elements of 'cultural relativism' in that institution A's view of institution B will not necessarily be the same as institution B's view of itself – and vice versa.
- UK HE institutions will tend to focus on the issues relevant to them – eg there is no point in an institution worrying about lack of progress towards distance e-learning if distance learning is not part of the mission of the institution.
- Institutions will tend to focus on benchmarking themselves against those 'comparator' institutions that they perceive as most relevant – competitors for students, similar in nature (eg research-led, international, with a particular governance style), similar in size, collaborators in other projects, and role models. These comparisons will cross 'home nation' borders and for some institutions they will cross international borders.
- Benchmarks should focus on indicators correlated with good practice and success, not be merely 'taxonomic'. (As example it is unlikely that the salary of the manager responsible for e-learning or the total spend per full-time equivalent on a VLE is closely correlated with success.)
- An element of 'metricity' (numeric measures) is useful (it is a competitive world), but additional narrative can always help. Metricity should not be forced (see above two examples).
- An underlying theory may be useful, but one theory is unlikely to support a comprehensive analysis. If over-used, theories can be a straightjacket (like metricity).
- Many e-learning benchmarks are not susceptible to determination by desk research from outside an institution. Several are so discoverable, others can be estimated by 'triangulation', others by analysis of research papers and agency reports, but many require direct observation of and engagement with an institution (Bacsich and Bristow, 2005).

4.4 Conclusions from the ALT-C workshop

At ALT-C 2005, a workshop on 'benchmarking e-learning' was held by the author, with 33 delegates. These were mostly from UK HE, with some from FE and a cohort from an organisation that straddles the boundary, UHI. There was also a delegate from New Zealand, who had been a participant in the New Zealand benchmarking study. By general agreement, he was asked to make some remarks at the close of the workshop.

After a short general introduction to the subject, delegates were asked to split into groups of about four to six, and each group to choose one (only one) of the benchmarking methodologies on offer. These were the Pick & Mix System, the NLN tool, the *Quality on the Line* guidelines, the APQC guidelines and (for those specialists interested) the NHS approach. Five groups formed. There was no taker for the APQC guidelines or the NHS approach; most interest was in Pick & Mix or the

NLN tool, but two groups were encouraged to take up the *Quality on the Line* guidelines. One large group split into two: one half looked at the NLN tool while the other analysed Pick & Mix.

Quality on the line

For these guidelines, delegates were given some additional briefing. It was suggested that they ignore any guidelines which (with the benefit of five years more experience) can now be seen to be irrelevant to success or best practice, and also to composite some together if this made sense.

It was also suggested that they try to rewrite each guideline into a form which allows some kind of metric in the six-point scale with supporting narrative. For example:

- The program's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applies specific standards

becomes something like:

- Evaluation of educational effectiveness: frequency, depth and range of instruments used.

Comments on these guidelines from one group included the remarks that they were 'of an era' and 'only a subset of what is required'; the other group noted that there was no real concept of governance or legal framework in the guidelines. (Regarding this second point, it is possible that this is to some extent an artefact of the different rhetoric used in the US and UK: in several US documents there is still a rhetoric of a community of scholars, self-organising and devoid of managers and support staff).

NLN tool

The comments from the subgroup that looked at the NLN tool were on the whole not very positive towards the idea of using it in HE. Individuals had questions as to the value of the criterion on 'learner IT skills' – this and some others were felt to be not specific enough to e-learning – and there was a feeling that there needed to be some priority ordering in the criteria (some being more important for 'success' than others). There were some reservations about the underlying MIT model (it is 14 years old). There was a feeling that the tool was too oriented to top-down approaches. (This is likely to be the case because NLN is or was a much more top-down programme than the HEFCE e-learning strategy.)

Pick & Mix

Since three groups looked at this tool, there were more comments and some questions. It is most convenient to express these in a list.

- One respondent felt that some of the criteria were irrelevant to 'success' in e-learning.
- Some new criteria might need to be added, such as something on sustainability and more on planning (the criterion on planning is still rather minimal).
- The criterion on the adoption phase (after Rogers) was not felt to capture the full meaning of 'embedding of e-learning'.
- It was felt that in addition to the 'Notes' and 'Instrument' columns, more detailed orientation notes were needed for each criterion.
- It was felt that the tool might be biased against the 'cottage industry' view of e-learning, regarding it as an early stage which institutions **must** pass through.

- There were some other remarks about the implicit value statements made in various of the criteria, and a feeling that in some cases the higher scores were not necessarily 'better' than the lower scores.
- There was a lively discussion about the criterion on 'VLE stage'. Even though movement to one VLE is conventional wisdom among industry consultants and has been recommended in the past by JISC, it was felt that this guidance might now be out of date. (Perhaps respondents had not looked at level 6, which notes 'One VLE but with local variants when strong business case, and activity of a post-VLE nature').
- There was felt to be insufficient focus on the learner in the criteria – but no suggestion of additional learner-focused criteria to be added. (Could this be another issue to do with the underlying rhetoric, this time of UK HE?)

Conclusion

In the author's view, one should take such comments (from a very small population) as not definitive but indicative: thus they do suggest some directions for further analysis and refinement. Small though the sample was, it appears to be the first time that such a comparison between rival methodologies has been done. The author plans to run further workshops on this topic, the next being at On-line Educa Berlin in November 2005.

At the end of the session, delegates were supplied with a one-page literature search document (similar to but shorter than the last section of this paper).

4.5 The author's 'Pick & Mix' tool

Factor	1	2	3	4	5	6	Notes	Instrument
Adoption phase overall (Rogers)	Innovators only	Early adopters taking it up	Early majority taking it up	Late majority taking it up	All taken it up except some laggards	First wave embedded and universal, second wave starting	How many segments of the Rogers model are engaged?	Interviews, surveys, documentation in IT reports, etc
VLE stage	No VLE	Different VLEs across departments	VLEs reducing in number to around two	One VLE chosen for future but not yet replaced former VLEs	One VLE	One VLE but with local variants when strong business case, and activity of a post-VLE nature	Degree of coherence across institution	Observation, purchase orders
Tools use	No use of tools beyond email, web and the VLE minimum set	Some use of tools	Widespread use of at least one specific tool, eg assignment handling, computer-aided assessment	HEI-wide use of at least one tool	HEI-wide use of several tools	Use of locally developed tools also	Scale, sophistication and depth of tools use	Interviews, cross-checking with JISC and CETIS (Centre for Educational Technology Interoperability Standards), etc

IT underpinning – usability	No usability testing, no grasp of the concept	Key IT staff understand the concept, test some systems	Explicit usability testing of all key systems	Most services usable, with some internal evidence to back this up	All services usable, with internal evidence to back this up	Evidence of usability involving external verification	Level of provable usability of e-learning systems	Further advice is needed from UKERNA (UK Education and Research Network), JISC and UCISA (University Colleges and Information Systems Association)
Accessibility	e-learning material and services are not accessible	Much e-learning material and most services conform to minimum standards of accessibility	Almost all e-learning material and services conform to minimum standards of accessibility	All e-learning material and services conform to at least minimum standards of accessibility, much to higher standards	e-learning material and services are accessible, and key components validated by external agencies	Strong evidence of conformance with letter and spirit of accessibility in all jurisdictions where students study	Level of conformance to accessibility guidelines	Split off separately for legal reasons. (This criterion regarded by some institutions as over-ambitious at present. Advice needed from TechDIS)

e-learning strategy	No e-learning strategy. No recent learning and teaching strategy	Some mention of e-learning within the learning and teaching strategy	e-learning strategy produced from time to time, eg under pressure from HEFCE or for particular grants	Frequently updated e-learning strategy, integrated with learning and teaching strategy and perhaps some others	Regularly updated e-learning strategy, integrated with learning and teaching strategy and all related strategies (eg distance learning, if relevant)	Coherent regularly updated strategy allowing adaptations to local needs, made public, etc	Degree of strategic engagement	Review of HEFCE, TQEF (Teaching Quality Enhancement Fund) and other documents. Interview with pro-vice chancellor (PVC) responsible
Decision-making	No decision making regarding e-learning – ‘each project is different’	Decision-making at meso level (school, department, faculty, etc)	E-learning decisions (eg for VLEs) get taken, but take a long time and are contested even after the decision is taken		Effective decision-making for e-learning across the whole institution, including variations when justified	Decisions taken in an organic and efficient way, eg round table	Robustness, sophistication and subtlety of decision-making	Observation and perusal of papers

Instructional design/ pedagogy	Terms not understood in the HEI		Terms well understood within the learning and teaching centre and among some academic staff		Pedagogic guidelines for the whole HEI, and acted on	A culture where techno-pedagogic decisions are made naturally	Level of practical but evidence-based knowledge and application of instructional design and pedagogic principles	Interviews
Learning material	Little conformance of learning material to house style for editing or layout	Rhetoric of quality, little conformance to any norms	Most learning material conforms to explicit editorial and layout guidelines	All learning material conforms to explicit editorial and layout guidelines – but little embedding in the process	HEI-wide standards for learning material, which are adhered to and embedded at any early stage, eg by style sheets	Much learning material exceeds expectations	Level of ‘fitness for purpose’ of learning material	Perusal of material, interviews
Training	No systematic training for e-learning	Some systematic training for e-learning, eg in some faculties	HEI-wide training programme set up, but little monitoring of attendance or encouragement to go	HEI-wide training programme set up with monitoring of attendance and strong encouragement to go	All staff trained in VLE use, appropriate to job type – and retrained when needed	Staff increasingly keep themselves up to date, ‘just in time’, except when discontinuous system change occurs, when training is provided	Degree to which staff have competence in VLE and tools use, appropriate to job type	Percentages plus narrative (Note: this may not involve training courses, but is likely to)

Academic workload	No allowance given for the different workload pattern of e-learning courses	Some allowance given, but distortions in the system as shrewder staff flee the areas of overload	A work planning system which makes some attempt to cope, however crudely, with e-learning courses		Work planning system which recognises the main differences that e-learning courses have from traditional	See the cell below	Sophistication of the work planning system for teaching	Detailed and possibly anonymous interviews and questionnaires. Some union sensitivities likely in some HEIs
Costs	No understanding of costs	Understanding of costs in some departments (eg business school)		Good understanding of costs	Activity-based costing being used in part	Full activity-based costing used and adapted to e-learning	Level of understanding of costs	Interviews and questionnaires. (The basis here is from CNL and INSIGHT JISC projects, also Becta TCO (total cost of ownership))
Planning					Integrated planning process for e-learning integrated with overall course planning	Integrated planning process allowing eg trade-offs of courses vs buildings		Interviews and questionnaires

Evaluation	No evaluation of courses takes place – that is done by evaluation professionals	Some evaluation of courses takes place, either by professionals or internal staff advised by professionals or central agencies	Evaluation of key courses is done from time to time, by professionals	Some external evaluations are done of courses	Regular evaluation of all courses using a variety of measurement techniques and involving outside agencies where appropriate	Evaluation built into an excellence, TQM (total quality management) or other ‘quality enhancement’ process – including benchmarking aspects	Level of thoroughness of evaluation	Interviews with key evaluators. Perusal of conference and journal papers
Organisation	No appointments of e-learning staff	Appointments of e-learning staff in at least some faculties, but no specialist managers of these staff	Central unit or sub-unit set up to support e-learning developments	Central unit has some autonomy from IT or resources function	Central unit has director-level university manager in charge and links to support teams in faculties	Beginning of the withering away of explicit e-learning posts and structures		Interview with vice chancellor and relevant PVC(s)
Technical support to academic staff	No specific technical support for the typical (unfunded) academic engaged in e-learning		Key staff engaged in the main e-learning projects are well supported by technical staff		All staff engaged in e-learning process have ‘nearby’ fast-response technical support	Increasing technical sophistication of staff means that explicit technical support can reduce		Interview with both top-level staff and selective interviews with grass-roots staff

Quality and excellence	Conformance to QAA in a minimalist way	An internal function which begins to focus on e-learning aspects	Conformance to QAA precepts, including those that impinge on e-learning		Adoption of some appropriate quality methodology – EFQM (European Foundation for Quality Management) etc – integrated with course quality mechanisms derived from QAA precepts	Active dialogue with QAA and wider quality agencies as to appropriate quality regimes for e-learning	Level of HEI overall commitment to quality and excellence agenda for e-learning	Interviews, questionnaires, quality reviews, etc
Staff recognition for e-learning	No recognition for staff, explicit pressure against (eg due to RAE)	Formal structure for recognition (eg teaching fellows), no real progress				Staff engaged only in the teaching process can reach a high level of salary and responsibility	Level of staff recognition (not only and not necessarily financial) against the pressure for RAE	Documentary evidence

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Appendix 5: Embedding staff development in e-learning in the production process and using policy to reinforce its effectiveness

Please see separate document at: www.staffs.ac.uk/COSE/cosenew/embedding.pdf

Appendix 6: Some useful models of teaching – to get started with

6.1 Paul Ramsden – Theory 1: Teaching as telling or transmission

A number of researchers have observed that the transmission model of teaching is widespread (Ramsden, 1992; Shuell, 1992; Laurillard, 1994; Koper, 2003). It is based on a deficit-accrual notion of learning which sees the main task of the teacher as being to supply information. There is little dialogue with students, and the teaching is monologic – the onus being on students to align their expressions of knowledge with the academic norm in the area. As Shuell points out, this is such a widespread view of teaching that it is taken for granted. Here the concentration is on content, on the subject matter. This pedagogic model might have been partially defensible when students and teachers were drawn from the same narrow social and academic backgrounds in traditional university settings. However, it is now failing under the sheer weight of extra students and the diversity of their social and academic backgrounds as well as the demand for flexible study modes. But the 'teaching as transmission' model is still widespread and tenacious, as Ramsden observes:

'There are some more modern versions of this theory too: the belief that the fundamental problems in university instruction inhere in the amount of information to be transmitted, and that these problems can be solved by technical fixes designed to transmit more of it faster....' (Ramsden, 1992)

Here we can see much of the rationale for the proposed uses of multimedia, computer-based learning and the internet which have been espoused since the 1980s. More recently, the interest surrounding learning objects and digital repositories shows the strength of interest and concern in content creation and its transmission.

The 'teaching as telling' scenario is consistent with the subject specialist model of amateur teaching, which has historically dominated higher education (HE) in the UK. The associated scholarly culture that 'trickles down' into the student experience is often one of isolated, individualistic and competitive activity (Crook, 1994). The experience of students in this kind of environment is often unsatisfactory. Typically, a student on a course passes through the hands of different lecturers all teaching from their own notes, not working as a team from the same 'script'. This has the effect of fragmenting the learning experience and subject matter. It also places a higher load on the student than is necessary and presents obvious barriers to non-traditional students.

In this pedagogic worldview it is possible to see why some teachers like to stick with creating and transmitting content. It is partly because they created their own content as part of the process of their own learning and relearning of their subject in order to teach it to their students. Thus their teaching strategy is often to get their students to learn from what they did. This is not a very sound approach, but it is common and intuitive and helps to account for lecturers' deep attachment to their own 'stuff'.

6.2 Paul Ramsden – Theory 2: Teaching as organising student activity

As Ramsden observes, the transmission model of teaching in HE (although still widespread) has tended to be supplanted in public discourse by concern about managing and directing student activity:

'Teaching is seen as a supervision process involving the articulation of techniques designed to ensure that students learn.... Activity in students is seen as the panacea. It is assumed that there is a finite set of rules which may

be infallibly applied to enable them to understand: these all imply that the students must learn energetically.’ (Ramsden, 1992)

Although this discourse often acts as a ‘cover’ for continuation of the transmission model, it is at least a step in the right direction. Here the concentration is on what the student does, not on what the teacher does – or delivers. In this scenario we can see much of the existing rationale for the use of virtual learning environments as management, direction, supervision and the ubiquitous delivery of content. We can also discern the basis for the use of ‘interactive’ media and computer programmes. Currently, a popular mantra among UK e-learning designers – who are usually media designers with little educational knowledge, as the role of instructional designer is almost completely absent in the UK – is that learning **must** be active to be effective, showing us the sharpness of Ramsden’s earlier criticism. Often, this mantra is little more than a justification for using some interactive aspect of the media being sold. A more sensible and efficient approach can be seen in the distance-learning community, where the academic subject specialist is just one in a team of professionals (Laurillard, 1994) and is often dispensed with after contributing their subject knowledge while the educational and media specialists finish the job.

6.3 Paul Ramsden – Theory 3: Teaching as making learning possible

This leads us nicely on to consider the third level in Ramsden’s hierarchy of theories of teaching. He sees teaching as an activity that includes delivering content and organising activities, but is also fundamentally concerned with learning about teaching itself and applying the lessons learnt to new students and situations. In this view, teaching is a constantly evolving, reflective and reflexive process in which there is no steady state of masterly expertise that you may attain and encode. As in any other craft, mastery brings an awareness of what you do not know as much as what you do know; this is a prime requirement for attaining and retaining that mastery.

Ramsden describes this process as developing an awareness of the seemingly contradictory development towards an increasingly relativistic and problematic understanding of the relations between teaching and learning:

‘It is as if the development itself denotes an acceptance of the restless tension of opposites in education.’ (Ramsden 1992, p117)

This three-level view of teaching certainly does not lend itself to being reduced to a simplified mechanistic process. It does, however, provide us with a potentially powerful way to analyse and evaluate proposals for using technology to support our teaching activities. Or to put it another way, if we intend to live by the slogan ‘education should lead the technology’ it gives us a way of explaining the ‘why’ and ‘how’.

Teaching, of course, does consume content and information, and is very concerned with planning and directing student activity. But that is not the whole story: there is much more to effective teaching than using content and directing student activity. The vital component of effective teaching is what teachers learn about their own teaching as they go along, and apply to their teaching. Ramsden makes the important point that this can occur at an individual, departmental and institutional level. In this view, good teaching is concerned and involved with students (their activities and their perceptions) and subject matter, is reflective and reflexive about the experience of teaching, and incorporates lessons learnt from the experience of teaching into teaching practice. In addition, teaching is a continuous **process**, not a repetitive act of pumping the same content at students or finding some illusory magic formula for student activity. As Ramsden explains:

‘Theory 3 is a compound view of instruction. In this conception, teaching, students and the subject content to be learned are linked together by an overarching framework or system. Teaching is comprehended as a process of working cooperatively with learners to help them change their understanding. It is making learning possible. Teaching involves finding out about students’ misunderstandings, intervening to change them, and creating a context of learning which encourages students to actively engage with the subject matter. Note that this theory is very much concerned with the content of what students have to learn in relation to how it should be taught...a teacher who uses this theory will recognise and focus especially on the key issues that seem to represent critical barriers to student learning. The content to be taught, and students’ problems with learning it, directs the method he or she uses.’
(Ramsden, 1992)

In Ramsden’s overall view of HE teaching, the mere provision of content is the crudest form of teaching (yet still very widespread according to educational psychologist Tom Shuell (1992)); this might be described as fragmentary teaching. Moving up the teaching food chain, the next level is the organising of student learning activity, often confused with or misinterpreted as the use of interactive and multimedia resources; this might be described as simple teaching. But these two types of activity need to happen in order to support what Ramsden describes as the most sophisticated type of HE teaching, which involves a dialogue between teacher and students (on which the teacher acts to fine tune to students’ needs); this might be described as complete teaching. Diana Laurillard has built on Ramsden’s work to create her ‘conversational model’ of teaching in HE. She has also done some highly useful work on analysing the ability of different types of media and learning technologies to support this model of teaching. An important part of this highest form of teaching is the ability to design situations and conditions in which your students can learn, and modify them in the light of feedback.

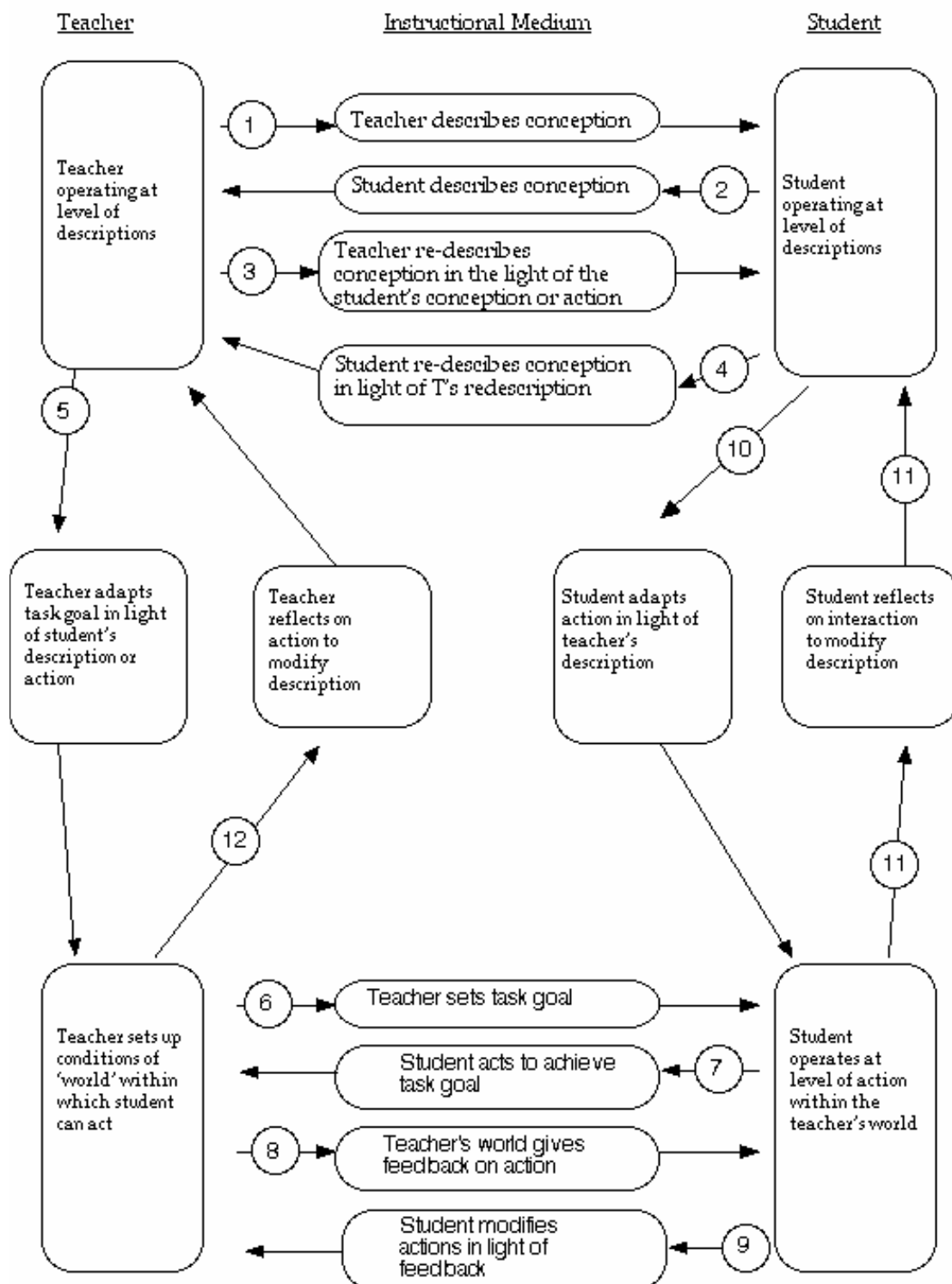
Content is one thing and organising student activities is another, but the important ‘stuff’ happens (as it always has done) between teacher and students. For those of us who feel obliged to use the language of enterprise to describe educational processes, the real ‘value added’ occurs in the teaching interactions with students. Content design and activity design are very important, but their role is to support the teaching process. Those who are serious about developing flexible learning need to attend to all these areas – it is all too easy to fall into the trap of doing what we can do instead of what we really need to do. This explains the commonly occurring mismatch between content and infrastructure development on the one side and lack of support for teaching on the other.

6.4 Introducing Laurillard’s conversational model

Laurillard’s conversational model of teaching (Figure 6.1) is an intuitive one for teachers, and extends the work of Ramsden nicely. We could use it as a design aid and map it onto our existing designs.

Figure 6.1: Laurillard's 'conversational framework' model

Laurillard's 'Conversational Framework' Model



Tips for setting up a learning context for students (from Laurillard, 1994)

For students to get the most out of a learning session, they need to know:

- why this topic is important and interesting

- its relation to other topics in the course
- what they need to know already
- the learning objectives for the session
- how to approach it.

For teachers to do this, we should:

- orient students to why this topic is important and interesting
- help them to see its relation to other topics in the course
- describe what they need to know already to make good progress in learning this new topic
- define the learning objectives
- provide preliminary exercises that alert them to what to look for.

Appendix 7: The need for institutional and professional change to accommodate technology – a staff development model mapped to the uses of learning objects and Learning Design technologies

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Abstract

This paper examines the potential for using learning objects and 'Learning Design' as vehicles for staff development in UK HE. To support this approach we propose using Ramsden's (1992) three theoretical models of teaching in HE to provide a conceptual framework to situate these technologies in. We observe that the introduction of these technologies into HE reveal and highlight underlying obstacles to their adoption by reifying existing pedagogic practice and values. We map these obstacles onto Ramsden's theoretical framework and propose in outline a staff development strategy to help remedy them. This implies a change both in the institutional and professional organisation of teaching activity in HE. We conclude by presenting in outline the kind of changes required, which also provide us with an indicator of areas for further investigation.

Keywords

Pedagogy, Learning Objects, Learning Design, Staff Development, Institutional Change

1 Introduction

Learning objects and Learning Design (Koper and Tattersall, 2004) are entering the mainstream of the educational systems around the world and creating a 'buzz' of excitement about the possibilities of providing an efficient means of finding, sharing and reusing learning resources and designs. Yet, as is so often the case with the introduction of technology into an educational setting, this is bringing some of the underlying issues and features in our educational institutions to the surface (Pollock and Cornford, 2000). We argue that this reification effect of technology in education far from being a problem can be a useful development aid for improving pedagogic practice. To support our analysis we will use Ramsden's (1992) three theories of teaching in HE.

The particular staff development need we are interested in is educational design for e-learning. The heart of the problem here in the UK is that teaching staff generally do not share and reuse learning resources and learning activities for their students, instead they concentrate on preparing 'their' content to deliver to 'their' students (Koper, 2003). The teaching activity that is carried out is deeply embedded in an institutional context and therefore difficult to share and abstract. To deal with these problems effectively first we have to identify them, as Ramsden observes:

'Half the difficulty with doing it better is knowing what the real problem is.'
(Ramsden 1992, p14)

2 Systemic factors

The arrival of learning objects, Learning Design and their related technologies from the industrial training and open learning sectors carries strong implicit organisational models that favour greater corporatism and a division of labour – an industrial model. This presents some problems; the opportunities for efficiency and quality gains are

already well rehearsed elsewhere. The main problem for us is that the HE sector does not have the organisational structures that these technologies require. Instead higher education is characterised by a very high degree of informality and autonomy at all levels – which is not necessarily a bad thing. An excellent analysis of these systemic obstacles to using technology in HE has been carried out by Newcastle University (Pollock and Cornford, 2000). The study found that the required administration processes often do not exist; a web version of the report can be found in the ARIADNE newsletter at <http://www.ariadne.ac.uk/issue24/virtual-universities/>

Teaching in HE in the UK has traditionally been accorded a low status (Ramsden, 1992), yet for most institutions income derived from teaching is the major source of institutional wealth, with figures of 80-90 per cent and above not being uncommon. So, for most universities teaching is the de facto core business activity. As tightening financial constraints bring this reality to the surface and technologies such as VLEs are being deployed, one of the emerging strategic gaps is a lack of pedagogic expertise.

There is a growing realisation that it is not very sensible to invest in learning technology and not change the way we work. It is a bit like a factory building a new production line and continuing to use handcraft production techniques – yet this is the situation that many of our institutions and teachers find themselves in. This is not surprising; tradition, dominant groups and vested interests can delay and obstruct the adoption and dissemination of new knowledge, as the history of science shows (Kuhn, 1996).

Thus, learning objects, Learning Design and their implicit organisational and pedagogic models are colliding with the deeply entrenched pedagogic values and attitudes of the HE sector. Anyone who has worked in this area will recognise that it is a volatile environment which is still in the process of forming, as the recent collapse of the government-funded UK e-U has shown (MacLeod, 2004). In this process, orthodoxies from both traditions are being challenged in the new and emerging teaching practices and learning communities appearing at this interface. To move forward we need to address the so-called soft issues of professional and institutional cultures as well as some of the assumptions implicit in the technologies.

3 Using Ramsden's theoretical models to describe HE teaching and assess the uses of learning objects and Learning Design

Ramsden outlines three theories of teaching in HE that co-exist and build on each other in a hierarchical manner. They nicely represent the stages a university teacher progresses through as their pedagogic expertise improves, and they also provide a useful way of analysing the proposed and actual uses of technology to support teaching. The three stages see teaching as concerned with (labels in brackets are ours):

- delivering content (primitive)
- organising and supervising student activity (simple)
- teaching as adapting to circumstances and context in order to make student learning possible (sophisticated).

As noted in the introduction, technology in higher education often acts as a strong force to reveal hitherto hidden factors and demystify existing processes; this section looks at some of these kinds of issues.

Universities in the UK tend to be quite traditional in the way they organise their teaching activities. Lectures still tend to be the main focus of undergraduate teaching despite there being little educational justification for their existence other than being a

medieval solution to the logistics of delivering information to large groups of students (Laurillard, 1994). In UK higher education teaching (outside distance-learning providers) there is little tradition of sharing pedagogic resources or strategies, and to try to do so is often met with confusion and hostility. One of the major reasons for this is that teaching in higher education is essentially delivered by groups of individuals who see themselves primarily as subject specialists and not teachers. This situation is compounded by the fact that many institutions do not see teaching as a core function either.

3.1 Theory 1: Teaching as telling or transmission

A number of researchers have observed that the transmission model of teaching is widespread (Ramsden, 1992; Shuell, 1992; Laurillard, 1994; Koper, 2003); it is based on a deficit-accrual notion of learning that sees the main task of the teacher to supply information. There is little dialogue with students; the teaching is monologic – the onus being on the student to align their expressions of knowledge with the academic norm in the area. As Shuell points out, this is such a widespread view of teaching that it is taken for granted; here the concentration is on content, on the subject matter. This pedagogic model might have been partially defensible when students and teachers were drawn from the same narrow social and academic backgrounds in traditional university settings. However, it is failing under the sheer weight of extra students and the diversity of their social and academic backgrounds as well as the demand for flexible study modes. The teaching as transmission model is still widespread and tenacious, as Ramsden observes:

‘There are some more modern versions of this theory too: the belief that the fundamental problems in university instruction inhere in the amount of information to be transmitted, and that these problems can be solved by technical fixes designed to transmit more of it faster....’ (Ramsden, 1992, p111)

Here we can see much of the rationale for the proposed uses of multimedia, computer-based learning and the Internet that have been espoused since the 1980s. More recently, the interest surrounding learning objects and digital repositories shows the strength of interest and concern in content creation and its transmission.

The ‘teaching as telling’ scenario is consistent with the ‘subject specialist’ model of amateur teaching that has historically dominated HE in the UK. The associated scholarly culture that ‘trickles down’ onto the student experience is often one of isolated, individualistic and competitive activity (Crook, 1994). The experience of students in this kind of environment is often unsatisfactory. Typically, a student on a course will pass through the hands of different lecturers all teaching from their own notes, not working as a team from the same ‘script’. This has the effect of fragmenting the learning experience and subject matter. It also places a higher load on the student than is necessary and presents obvious barriers to non-traditional students.

In this pedagogic worldview it is possible to see why some teachers like to stick with creating and transmitting content. It is partly because they created their own content as part of the process of their own learning and relearning of their subject in order to teach it to their students. Thus their teaching strategy is often to get their students to learn from what they did – this is not a very sound approach, but it is common and intuitive and helps account for lecturers’ deep attachment to their own ‘stuff’.

Learning objects

The arrival of learning objects and Learning Design into this scene is having some unexpected effects. One of the traditional learning object orthodoxies is that they should be free from internal contextual content to make reuse easier; this makes a lot

of sense for a specialist educational workforce as in computer-based training and instructional design. But this presents severe problems for 'general practitioner' teachers and lecturers, who are increasingly clear about their need for meaningful contextual information about the resource, to enable them to assess it and reuse it. A particularly popular request is for some kind of review process that allows users of the resource to record their usage and evaluation of it for others to examine (Rehak and Mason, 2003; Casey, 2004). It is also increasingly being recognised that the production of this kind of usage information (sometimes called secondary meta-data) can be important for professional and institutional strategic development purposes, as Philip and Dalziel (2003) propose:

'These requirements make clear the need for new conceptions of learning object meta-data, and new ways of using repositories – not just for search and retrieval, but as a living, growing body of shared practice.'

3.2 Theory 2: Teaching as organising student activity

As Ramsden observes, the transmission model of teaching in HE (although still widespread) has in public discourse tended to be supplanted by concern about managing and directing student activity:

'Teaching is seen as a supervision process involving the articulation of techniques designed to ensure that students learn.... Activity in students is seen as the panacea. It is assumed that there is a finite set of rules which may be infallibly applied to enable them to understand: these all imply that the students must learn energetically.' (Ramsden, 1992, p113)

Although often this discourse acts as a 'cover' for the continuation of the transmission model it is at least a step in the right direction. Here the concentration is on what the student does, not on what the teacher does – or delivers. Here we can see much of the existing rationale for the use of VLEs as being management, direction, supervision as well as the ubiquitous delivery of content. We can also discern the basis for the use of 'interactive' media and computer programmes. Currently, a popular mantra among UK e-learning designers – who are usually media designers with little educational knowledge, the role of instructional designer being almost completely absent in the UK – is that learning **must** be active to be effective, showing us the sharpness of Ramsden's earlier criticism. Often this is little more than a justification for using some interactive aspect of the media being sold. A more sensible and efficient approach can be seen in the distance-learning community, where the academic subject specialist is just one in a team of professionals (Laurillard, 1994) and is often dispensed with after they have contributed their subject knowledge while the educational and media specialists finish the job.

Learning Design

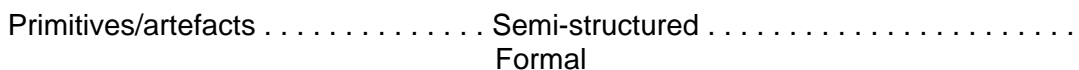
Currently, a lot of excitement has been generated in the world of educational technology by the arrival of 'Learning Design', a technical specification for representing in both human and machine-readable terms the pedagogic strategy that can be employed to teach a particular course. The particular risk with Learning Design is that its proponents will fall into the trap outlined by Ramsden concerning the over-emphasis on activity and an implicit positivist conviction that all we need to do is find the 'right way' to teach a particular course and encode it to make it a 'run-time' success. It is easy to get over-enthused by the possibility of the technology and lose connection with the reality of teaching and learning at the ground level. Despite this caveat, Learning Design does have a great potential for 'capturing' and sharing pedagogic strategies, with obvious applications to staff development as well as uses for institutional knowledge management.

At present, the Learning Design language itself looks far too abstract for general teaching staff to be able to use and is likely to be restricted at least initially to those with the educational design skills that can work at the required level of pedagogic abstraction. Yet this situation is not as negative as it might seem. A seminar of the JISC X4L (Exchange for Learning) programme in January 2004 building on earlier discussions in the e-learning community suggested that what was needed were a number of initiatives and support tools to help teachers bridge the gap between traditional embedded pedagogy and the more abstract representations required by Learning Design (Beetham, 2004). One of the conclusions of the X4L seminar was:

‘...that many teachers do not possess a vocabulary for articulating and sharing their pedagogic strategies and designs with others, particularly beyond their cognate discipline areas.’

Currently, there is a lot of work going on that intends to address this issue by looking at ways to support teachers to articulate their designs and activities in ways that can then be further developed into formal learning designs. Tools and methods are being proposed to take care of these ‘middle’ representations, such as mind maps, concept maps, the Semi-Structured Learning Design Statement from the ACETS (Assemble, Catalogue, Exemplify, Test and Share) project at Edinburgh University (<http://www.acets.ac.uk>) and the Dialog Plus (<http://www.dialogplus.org/>) design toolkit from Southampton University. The UNFOLD European project (<http://www.unfold-project.net:8085/UNFOLD>) is also doing valuable work in this area and serves as a focus and forum for this kind of development as well as more sophisticated explorations of the Learning Design concept and specifications. All this work is valuable, but we need to also recognise the rougher and more tentative conceptions of pedagogy that practitioners really use; we would call these ‘primitives’ and ‘artefacts’. Together these approaches give us a useful notion of a Learning Design continuum, as shown below.

Figure 1: Proposed learning design continuum



As we shall see, this nicely complements our proposed framework for staff development using these technologies. From a staff development point of view the good thing about this continuum is the support it provides to help in beginning to articulate teaching strategies.

Paralleling these developments there is a growing realisation that content in the form of learning objects and pedagogic designs in the form of learning designs are less likely to be useful (or even used) without some sort of contextual information about how they are intended to be used and how the actual use of them has worked out in the past. This may be obvious to teachers but not for some technical developers, who are often far removed from the realities of teaching. This vital contextual information has been referred to as ‘secondary meta-data’ and ‘secondary resources’; see Casey (2004) and Philip and Dalziel (2003) for an interesting discussion of the implications of this.

One interesting related development is the emergence of and growing interest in educational design ‘patterns’ (Bartolucci et al, 2003) for courses that can be shared and reused. An intriguing aspect to the use of patterns is that it might also present an elegant solution to some of the dilemmas described by Stephen Downes (2003) between context and reuse. In this way, patterns might usefully correspond to what

the community has called 'intermediate levels of description'. In this vision it would make sense for learning designs to be associated with their 'pattern', to help teachers adapt the design. This could help reduce the cognitive load of deciding how and what to reuse by future users. This is certainly an area that would benefit from further research. This approach has striking parallels with the techniques employed by the Toshiba software factory, where programmers were asked to file such 'high-level' generalisations with their code (van Vliet, 1993).

What this points towards is a realisation by the technical and developer community that there is much more to teaching than delivering the 'right' content and organising the 'right' student activities. This is uncomfortable for some as it implies that there are going to be things they are not going to be able to capture or represent even with the wonders of XML and the techniques of the semantic web. It's about time – many of us have been labouring under the dubious illusions touted by some proponents that it is possible to capture everything we need to know about teaching and represent it in machine-readable form.

Still, the myth that there is some 'magic bullet' type of solution persists in the developer community, and we hear phrases such as 'with enough computing power' and 'with the right AI (artificial intelligence) techniques' that we can crack the problem. To be blunt, they should know better – they had their own AI bubble back in the 1980s, a kind of dress rehearsal of the dotcom bubble at the end of the 1990s. AI works best in well-defined problem spaces. Using learning objects and learning designs to support a teaching and learning community is very far from being a well-defined problem space. Those who have recovered from their AI hangover now advocate using technology to support human intelligence in dealing with these kinds of problems, which is well fitted for dealing with complexity and multiple meanings – and resolving them. The future of e-learning will consist of humans, assisted by technical agents, operating and maintaining networked e-learning systems.

3.3 Theory 3: Teaching as making learning possible

This leads us nicely to consideration of the third level in Ramsden's hierarchy of theories of teaching. He sees teaching as an activity that includes delivering content and organising activities, but is also fundamentally concerned with learning about teaching itself and applying the lessons learnt to new students and situations. In this view teaching is a constantly evolving, reflective and reflexive process in which there is no steady state of masterly expertise that one may attain and encode. As in any other craft, mastery brings an awareness of what one does not know as much as what one does know, and this is a prime requirement for the attainment and retention of that mastery.

Ramsden describes this as the development of an awareness of the seemingly contradictory development towards an increasingly relativistic and problematic understanding of the relations between teaching and learning:

'It is as if the development itself denotes an acceptance of the restless tension of opposites in education' (Ramsden, 1992, p117)

This three-level view of teaching certainly does not lend itself to being reduced to a simplified, mechanistic process that can easily be entirely encoded in a learning design – which suggests limits to the application of Learning Design. It does, however, provide us with a potentially powerful way to analyse and evaluate proposals for utilising technology to support our teaching activities. Or to put it another way, if we intend to live by the slogan 'education should lead the technology' it gives us a way of explaining the 'why' and 'how'.

Teaching, of course, does consume content and information and it is very concerned with planning and directing student activity. But that is not the whole story – there is much more to effective teaching than using content and directing student activity. The vital component of effective teaching is what the teacher learns about their own teaching as they go along and applies to their teaching. Ramsden makes the important point that this can occur at an individual, departmental and institutional level. In this view, good teaching is concerned and involved with the students – their activities and their perceptions – and the subject matter, and is reflective and reflexive about the experience of teaching and incorporates lessons learnt from the experience of teaching into teaching practice. In this view, teaching is a continuous **process** not a repetitive act of pumping the same content at students or finding some illusory magic formula for student activity. As Ramsden explains:

‘Theory 3 is a compound view of instruction. In this conception, teaching, students and the subject content to be learned are linked together by an overarching framework or system. Teaching is comprehended as a process of working cooperatively with learners to help them change their understanding. It is making learning possible. Teaching involves finding out about students’ misunderstandings, intervening to change them, and creating a context of learning which encourages students to actively engage with the subject matter. Note that this theory is very much concerned with the content of what students have to learn in relation to how it should be taught...a teacher who uses this theory will recognise and focus especially on the key issues that seem to represent critical barriers to student learning. The content to be taught, and students’ problems with learning it, direct the method he or she uses.’ (Ramsden, 1992, p114)

4 A proposed framework for staff development

We should not underestimate the problems we are up against here, as Ramsden points out:

‘To do these things is never easy, especially if the departmental or institutional context is one where surface approaches are seen as a normal way of learning and where students’ learning difficulties are not seen to be the teachers’ problems.’ (Ramsden, 1992, 151)

Assuming change is really desired, then Ramsden’s three theories of learning provide a fairly clear and intuitive development framework model for individuals and groups to follow, each stage building on the previous one. Briefly, the prescription for change is as follows.

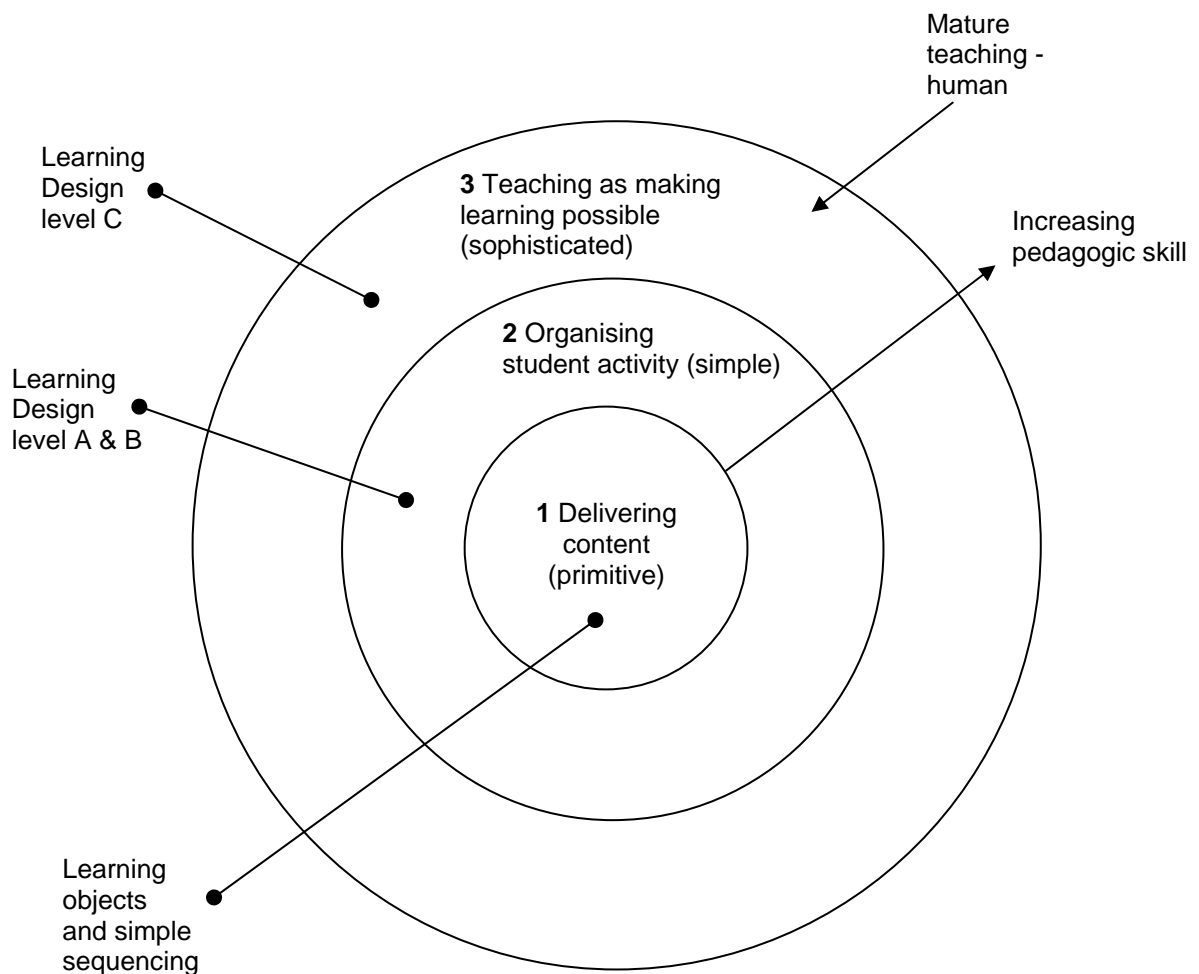
Technologies such as VLEs, learning objects and Learning Design all strongly imply working as a team to design, develop and deliver courses – the importance of this should not be underestimated. Working as a team, sharing learning resources and discussing approaches to teaching are currently comparatively rare in HE in the UK.

A good model for academics learning to teach along the lines advocated by Ramsden is that of the notion of ‘cognitive apprenticeship’, a development of ideas from the work of Lave (see <http://tip.psychology.org/lave.html>) by Brown, Collins and Duguid (1989). This approach proposes that people learn a ‘craft’ (practical or theoretical) in the context of a particular ‘community of practice’ (Wenger, 1998), and expertise is maintained and passed on through that community by people working together. This model often includes the notions of zones of proximal development, from the influential Russian psychologist Vygotsky (<http://tip.psychology.org/vygotsky.html>), and ‘instructional scaffolding’, developed by Bruner (<http://tip.psychology.org/bruner.html>). It sounds more abstract than it is; zones of proximal development is the concept that expertise in a particular subject

can be separated into a number of steps, and that with support (scaffolding) the learner can move up the steps to achieve proficiency. Scaffolding denotes the idea that people need support (ideally from their peers and 'masters' in the craft, but potentially from many other sources) until they can develop their expertise at a level above where they currently are.

Ramsden's three theories of teaching provide us with a good description of the 'zones' that require to be mastered by academics, departments, faculties and institutions as they mature as teachers. The diagram below shows their relations to learning objects and learning designs.

Figure 2: Ramsden's models mapped to the technologies as proximal development zones



The most important building block in our proposed model of development for academics is for them to work in teams that do not just include academics but also media designers, learning technologists and educational design specialists such as instructional designers. This division of labour is necessary for efficiency (Laurillard, 1994), but from our point of view this is where the real usefulness of technologies such as learning objects and Learning Design becomes clear. They become what Wenger (1998) calls 'boundary objects'. This simple idea has some important ramifications about the uses of these technologies:

- They act as a form of collective memory for a particular community that can be accessed and reused by that community in the future.
- They support the construction and sharing of enough meaning between different groups (subject academics, tutors, administrators, instructional designers, media designers etc) to allow them to understand their place in the educational system they are working in.
- To achieve the first two objectives the necessary contextual data needs to be collected.

Working as a team to design, develop and deliver courses, and sharing their learning materials and conceptions about teaching and learning are the basis for potentially powerful staff and institutional development processes. The ability of learning objects and learning designs to support this process can be exploited. Properly conceived and planned, this process may also play a role in building and strengthening scholarly communities.

5 Conclusion

Learning objects and Learning Design have been eagerly welcomed and adopted by the e-learning community in the UK, and this has brought to the surface some of the issues discussed in this paper. Rather than presenting an impassable obstacle, this reification of existing pedagogic practice, attitudes and values is useful and identifies areas to be addressed through staff development, although we do not underestimate the task at hand.

As a result of these developments it is now increasingly obvious that the human infrastructure needs to be developed to effectively use these new tools (and the more recent ones such as VLEs etc). This is likely to pose some significant challenges in the form of institutional and professional change. As Mayes (1995) reminds us:

‘Education is a social and political system, and the checks and balances that keep the system working may not be shifted by any technology.’

Along the way, we may indeed find that learning objects and learning design do help in transforming teaching in HE – it just might not happen the way we thought it would.

5.1 An outline of the organisational and professional changes required to utilise a re-skilled workforce

Alongside the staff development framework there needs to be a change to the institutional and professional organisation of teaching that can actually utilise a re-skilled teaching workforce along the lines we have been discussing. As Carol Twigg (2005) has observed, much of the development of e-learning in HE to date has been ‘bolted-on’ to existing structures and practice; to move forward, she contends that the process of teaching has to be re-engineered around the technology. In this context, staff development without parallel institutional/organisational change makes little sense as there will be nowhere to use and develop the skills that we are advocating; it would be a classic misuse of training and be counter-productive. To be clear, the underlying causes of the obstacles to the adoption of learning objects and Learning Design are professional culture and institutional organisation. As Mayes observes, there has to be the will to change to accommodate the technology – staff development alone cannot make this happen. The kind of changes we envisage are relatively simple, but raise some profound questions for traditional HE institutions and academic staff about their roles and relationships. These are the areas that we see as fertile for further work:

- Teaching is recognised as the primary business activity for most HE institutions and treated accordingly.
- Courses are designed, developed and delivered by multidisciplinary teams – rather than individuals.
- Course content/syllabus is not changed (apart from maintenance) for between 3-7 years.
- All course materials are created and shared before the course begins – ie no teaching from your own notes.
- The staff who teach and tutor on a course are probably not the staff who designed and developed the course.
- Staff teaching and tutoring on a course are likely to be on different employment contracts to traditional lecturers, who are primarily subject specialists.
- All course content and teaching and learning materials are digitised and shared in a central institutional repository in learning object format.
- Novice academic teachers (and support staff) are allocated a ‘master’ and team to develop their skills in a clear institutional staff development framework.
- Learning objects have enough contextual information in them for the members of the team to make sense of them and reuse them – pedagogically, technically and administratively.
- Learning Design is used to represent the pedagogic strategy associated with a learning object, and this is used for staff development purposes and as an aid to reflective practice, with a user-friendly graphical interface.
- Learning designs and learning objects are mapped to particular curriculum teaching aims and learning outcomes in an easy-to-understand graphical format to facilitate search and reuse.

These activities and objectives are the type of context that needs to exist to make our staff development framework meaningful. Currently, little of this activity exists in HE outside distance-learning providers. As this context develops in HE, then our proposed staff development framework becomes more relevant.

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Appendix 8: Discussion points from Digitalinsite

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Overview

The following list of questions, observations and suggestions is intended to provoke you into thinking about your situation. Over the years we have found that many questions and problems relating to flexible and e-learning reoccur regularly. We decided to compile our responses to provide a convenient record for ourselves and others to browse through in order to help them reflect on their situation.

No two situations will be exactly the same, but like any field of work many common patterns are repeated, especially during the cycle of adopting a new set of approaches and tools.

Your situation

You have been asked/told to create an on-line/e-learning course. This does not mean that you have to throw out everything you know. A lot of hype and misconceptions surround this area; the following points might help.

- 1 **On-line learning, e-learning and similar terms are not very precise or useful.** That said, this type of design and delivery involves elements of open and distance-learning techniques where the creation and delivery of the course is a team effort. Open/distance-learning courses and materials take longer to create, are more expensive and involve making your teaching strategies explicit to the rest of the team and the students.
- 2 **Working as part of a team is often the greatest challenge.** The change in working culture from 'me' to 'we', which is required to make the investment in e-learning viable, is the most overlooked and largest problem facing most organisations.
- 3 **If you are doing this work as a result of a successful bid for funding, what does the funding documentation covering the work say is required?** What did the call for bids say and, most importantly, what did your organisation say it was going to do in return for the money? Are the terms e-learning, on-line learning etc specified anywhere? If another organisation applied for and got the funding and has contracted the work to you to do, what did they say they were going to do for the money they got, and what did they ask you to do? You really need to answer all these questions before going any further. This is where most projects start to go wrong.
- 4 **Evaluation** is a pain for most people. They just want to get on with the job, and this activity is usually left to the end of the project to satisfy the funding arrangements. The best time to start your evaluation activities is **now**. Ideally, do it at the start of the project and you start by getting the answers for the previous questions. These answers should give you the statements that describe what you are doing and trying to achieve. Clear answers to these questions enable you to frame your evaluation design fairly easily.
- 5 **How much money/time/people/resources have you got in reality to use for this work?** Again, a clear statement of what you are doing will help you to figure out what you need.
- 6 **Costing for this kind of work is notoriously difficult** – as a rough rule of thumb, multimedia creation is expensive, and making lots of web pages is also

costly (and often pointless educationally). One metric for the development of face-to-face materials is five hours' development time to one hour of delivery – you should regard that as the minimum for your e-learning development costs. If you are under cost pressure, create most or all of your materials for off-line delivery via print/CD/DVD and use the on-line environment for supporting students and setting individual and group activities. You can also put links to Word files etc on your site or VLE. This approach is widely used by respected outfits like the OU and University of Southern Queensland, so it should be good enough for you. The advantage is that this still counts as being 'e-learning'.

- 7 The OU has a useful rough measure of the on-line 'footprint' for a course as:
 - a totally on-line – no face to face and all materials on-line (a very small proportion of its courses)
 - b mixed – some on-line, some off-line materials and face to face (the majority of its courses)
 - c optional – students can complete the course without going on-line.
- 8 **If you are new to on-line learning and teaching, why not take a leaf out of the OU's book?** When the OU got into this in the 1990s, it took existing distance-learning courses and added an element of information and communications technology (ICT) to them, usually a simple website and one or more discussion forums. This approach is called the 'wrap-around' model and adds a layer of 'e-ness' or 'on-lineness' that can be as thick or as thin as you like or can afford. It is a good model to follow if you are just getting into this area.
- 9 **If you follow the wrap-around model you need to think about the teaching materials you are going to use and your teaching strategies.** The biggest break point for most people doing e-learning is getting their head round the fact that they are really starting to do a version of open and distance learning at the same time.
- 10 **On-line learning and e-learning really involve the on-line and distance-learning skills of starting to speculate about and share how you think people will learn** the subject matter. It is a step change away from face-to-face teaching, where what happens behind the classroom door is a mystery to outsiders.
- 11 **Another tripping point for people getting into on-line learning and e-learning is sharing their learning materials.** It really makes no sense for different teachers to continue to use their individual notes, resources and perspectives on a subject. Like it or loath it, this is a team sport. You need to coordinate with your colleagues what you are going to present to your students and how you expect your students to use your stuff to learn.
- 12 **Some of the worst courses we have seen** are those where teachers carry on as they do in a face-to-face deeply 'embedded' contextual institutional setting. This is typified by poor communication and coordination between and within the course design and delivery teams. Typically, the teachers write their materials the week or day before the students need them, with little overall coordination. This results in a scrappy and unsatisfying experience for students, often with poorly designed assessments and on-line student activities, and with poor responses from the teachers. Such courses are fairly wretched affairs for all involved.
- 13 **What are you going to teach?** Is there a curriculum or existing teaching aims and learning objectives and outcomes from a syllabus that you can use? If not,

you need to create them. This is often an iterative and messy process. These questions might help:

- a What does the subject matter consist of (the domain) and at what level are you operating?
- b Is there an articulated need for what you are doing? If not, you need to do a needs analysis to produce one – it really is worth it.
- c Is the subject matter well structured internally?
- d Is the subject matter theoretical, or involved with practice, or both?
- e Are there any strong ethical positions you want to convey?
- f Are there any standard texts or materials you can use to support your work? If so, use them.
- g What prerequisites are required to enter the course?
- h What are the characteristics of your target students? Can you create student profile(s)? The more you know about your students the better.
- i What level of autonomous independent learning and motivation are your students likely to have? This is a major design factor:
 - ii What level of access to computer and network services will they have? What IT skills will they have?
 - iii Work backwards from the learning outcomes to design the assessment activities.
- j Design student activities to support the outcomes.
- k For rough design work, brainstorming, mindmaps and concept maps are all useful, as is a hierarchical content list of the subject matter.
- l If you are really stuck, but have a lot you would like to say about the subject or some favourite materials or activities, then just get creating. You might then be able to make something more formal in the way of some design specifications. It always helps to discuss stuff with a colleague – as long as you choose the right colleague. If you have access to an instructional designer, you are very lucky. If not, seek out someone who has designed distance-learning courses and materials, or someone who has worked in e-learning already (be careful with e-learning practitioners though – there is a lot of bad and mad practice out there).
- m Have a look at some examples of e-learning materials and see which styles suit your purpose or resources.
- n Try using the scalable D1 design template (available from the Digitalinsite website) for recording what the student and teacher are doing with what resource and in connection with what part of the knowledge domain.
- o Try using the subject matter Z1 zoom template (available from the Digitalinsite website) to get a sense of how what you are working on might relate to the overall course content and structure.

14 **On-line materials creation (ie materials intended to be viewed and used on-line) should be treated with some caution:**

- a Making people read lots of text on screen is bad practice and an ergonomic nightmare, even for able-bodied students with good eyesight – most will hit the print button. If you really want to help your students, just put a link to a Word document – screen readers also find it easier.

- b Even experienced web designers have problems making their web pages meet accessibility standards; most academics and many in-house support units don't have these skills.
 - c Make navigation and layout clear, consistent and simple, ie make your stuff easy to use. Your students are usually not looking for an 'MTV' experience (contrary to the hype), they just want to pass their course.
 - d Use your on-line web pages thoughtfully to complement your other learning materials and resources.
 - e If you are providing links to websites, make sure you annotate the links and say what you think is good about the sites and what parts of the course they are relevant to. There are some great web resources out there and this is a good way to increase the educational value of them. It also scores points on quality assessment.
 - f Bad practice and mad practice can easily take hold in departments which have little interaction with the rest of the educational world. Make sure you look at what other people are doing. Converting all your existing teaching materials to web format is not really a good way to go, nor is it sustainable in the long term.
- 15 **Video-conferencing of lectures is not a good use of anyone's time or the network.** Most lectures have little or no interactivity and tie down different groups of students at the same time – not very flexible. Most lectures would be far better recorded and put on a CD or DVD.
 - 16 **If you want to use video-conferencing, use it for small-group work** where students have the time to comment – this scores on quality.
 - 17 **Design your course so that students' on-line activities and interactions are clear, purposeful and managed.** You need to set and manage your students' expectations for response times from the start.
 - 18 **If your course involves a lot of on-line/distance work for your students, make sure you have a face-to-face induction session** – this is worth its weight in gold in sussing out potential problems and checking the IT skills of the students. It also helps to build a group identity and gives you some goodwill credit that can stand you in good stead later.
 - 19 **Set clear standards for on-line behaviour (netiquette)** and take prompt action if people behave badly (warn and exclude, etc).
 - 20 **Most VLEs provide an almost 'forensic' record** of what students and teachers have been doing and saying to each other – this 'Big Brother' aspect of on-line work takes some getting used to. It can show the best and the worst of teacher behaviour.
 - 21 **Trying to project your face-to-face teaching behaviour exactly onto e-learning generally fails** – it is a different medium.
 - 22 **E-learning is not suitable for every subject or every student.** Is what you are proposing sensible? Does it make sense? For instance, a totally on-line course on basic computer literacy aimed at students with no prior IT experience would be wrong. They would need a printed handbook, face-to-face teaching and a computer lab.
 - 23 **Like face-to-face courses, the first couple of weeks or so of an on-line course usually determine how the rest of the course will go.** Setting the tone and making sure that everyone is settled in and clear about what they

- have to do and have the necessary resources is vital. This where an induction session is very useful.
- 24 **Copyright** – you need to be able to account for all the materials you are using in the course – where they came from and what permissions you have to use them, so keep records.
 - 25 **Always provide a credits list** of those people who have worked on the course.
 - 26 **Copyright and intellectual property rights (IPR) are essentially simple** – you cannot use other people’s stuff unless:
 - a it is expired from copyright
 - b you have been given permission to use it
 - c you are allowed to use it under some kind of licensing scheme, such as a public collection.
 - 27 **Working with copyright and IPR:**
 - a Always read the licence conditions if there is one on a site.
 - b Keep records.
 - c If you want to apply for permission, it will probably take a long time and you might have to pay – probably not worth the hassle.
 - d If you do ask for permission, make sure you ask the right person – lecturers do not own their materials, their employer does.
 - 28 **Designing courses and materials which require little updating and maintenance is a really important skill to acquire.** Here are some tips:
 - a under construction (at the Digitalinsite website)
 - 29 **Design for reuse** – under construction (at the Digitalinsite website)
 - 30 **Administrative issues are a bigger problem for e-learning than you might think**, so start thinking about them and work-arounds early on.
 - 31 **A good way to evaluate a course design, learning material or learning activity** is to put yourself in the students’ shoes and carry out a ‘cognitive walk through’ – better still, get a colleague to do this and observe them.
 - 32 **Traditional courses are like ‘black boxes’** where no one knows what really goes on. Inside the course, students pass through lessons and sections taught by academics, based on the lecturers’ own notes and experiences. From the students’ point of view this is a bitty and fragmentary experience. Trying to stick with traditional methods and include e-learning generally fails.
 - 33 **Taking a collective team approach and using a common set of teaching materials improves the student experience and performance.** Research evidence is beginning to appear which backs up this statement, and this is the reason for adopting learning objects in our work.
 - 34 **Starting from scratch with a novice subject-matter expert** – if you are having to dream up a module from scratch with an academic subject-matter expert who has little experience of this kind of work and without any descriptors or syllabuses in existence, this can be a bit daunting to say the least. Below are some tips that might be useful:
 - This situation can be the educational equivalent of writer’s block. A good trick to get going is **not** to start writing content, any content (we have all done that), but instead to think about your subject-matter content and just

create a structured and hierarchical list that describes and breaks down the content. This gives you the initial syllabus of what you might want to cover, breaking it up into the logical chunks of what must be known in order to move on to the next chunk to allow someone's knowledge and understanding to increase. You can use your own learning experience as an initial guide for this, but be prepared not to inflict it on your students.

- This approach represents the deficit-accrual or 'building block' model of learning and teaching. It's not perfect, but it's a good start. If we stopped here, we might well be justly criticised by educationalists, so let's call this part of the process our 'knowledge capture phase' – sounds good?
- A useful next step is to think about what someone can do or represent to show that they have understood this subject content, or to put it another way, what would mastery of this subject material consist of? This starts us on the process of creating our learning outcomes and assessment criteria.
- Next up, it would be good to think about how we should teach this stuff. Following the order we have come up with so far from a subject specialist's perspective is intuitive for us, but is often not the best way to teach the subject to students. A good rule of thumb is to start the teaching plan with a presentation of what the module leads towards, including the main aspects, constituents and relations of the subject matter. This is good for motivation and lays down an overview of the subject structure that helps students to develop an orientation towards the subject. Then look at the main parts of the subject matter in what is effectively your prototype module. They probably don't all need to be taught in a certain order – can you break them up into chunks that can be moved around?
- Now is a really good time to think about your prospective students. What are their likely characteristics, in terms of prior knowledge, attitudes and their own contexts? Write down your answers – this is one of the main points of reference for your module design. A good next question to ask is 'How can I help my students to change from their current conceptions of the subject matter towards that level of knowledge which would represent mastery?'. Good subsidiary questions to ask are 'What are the typical types of change involved in those conceptions?' and 'Which ones are most likely to pose the biggest problems for my students?'. Answers to these questions begin to provide us with guidance on what to teach and how and what we need to concentrate on. They are also in line with Ramsden's proposed approach to teaching. Then we can go back and refine the aims and objectives of the module as well as the assessment criteria.
- You might have to go through this cycle several times, but you should get there. **Now** you have a good framework to start laying your content on – or creating content for.

Appendix 9: The student profiler

How to use the profiler

The simple idea here is to use the Scottish Credit and Qualifications Framework (SCQF) level descriptors to give your target students a profile. We provide a short overview of the SCQF then an edited version of the 12 levels, which shows the types of 'generic cognitive skills' and the expectations for 'autonomy, accountability and working with others' that are supposed to be associated with students at that level. Again, this is not to be viewed as an inflexible and authoritative statement – it is intended to be a useful guide. The main benefit is that you and your colleagues can use it to develop a shared, agreed profile of the typical student you expect on your course. This can then play a useful role for planning the type and degree of flexibility to provide which is realistic in terms of your student population.

For convenience we have also included the level descriptors for 'knowledge and understanding' in the subject area. This is likely to be particularly helpful to those academics who see themselves as mainly subject-matter experts and are not used to visualising their students in terms of the other two sorts of descriptors. The student profiler (and other simple tools) can help a disparate group of academics to come to a shared understanding of different factors when designing or discussing a course.

A note about the SCQF – it is well worth your time to get acquainted with the SCQF, as it provides potentially powerful support for course design in further and higher education. In a course design team it would be wise to have one person delegated to using the SCQF on behalf of the team. A useful introduction to the SCQF is available from: <http://www.scqf.org.uk/downloads.asp>

An overview of the SCQF

Levels and credit points

The SCQF uses two measures to describe qualifications and learning programmes:

- the level of the outcomes of learning
- the volume of outcomes, described in terms of the number of credits.

The volume of an outcome is arrived at by estimating the amount of time required by the 'average' learner, at a particular level, to achieve the outcomes.

Levels

Each of the 12 SCQF levels can be the location of one or more qualifications. At present, these are the qualifications of higher education institutions in Scotland and those awarded and accredited by the Scottish Qualifications Authority.

Level 1 represents outcomes designed for learners with severe and profound learning difficulties, while level 12 contains outcomes associated with doctoral studies. Increases in level demands relate to factors such as:

- complexity and depth of knowledge and understanding
- links to academic, vocational or professional practice
- the degree of integration, independence and creativity required
- the range and sophistication of application/practice
- the role(s) taken in relation to other learners/workers in carrying out tasks.

Level descriptors

Each level of the SCQF from 2-12 has a descriptor that sets out its characteristic general outcomes under five broad headings:

- knowledge and understanding (mainly subject-based)
- practice (applied knowledge and understanding)
- generic cognitive skills (eg evaluation, critical analysis)
- communication, numeracy and information technology skills
- autonomy, accountability and working with others.

The SCQF levels mapped to qualifications

SCQF level 1 – Access 1

SCQF level 2 – Access 2

SCQF level 3 – Access 3, Standard Grade Foundation level

SCQF level 4 – Intermediate 1, Standard Grade General level, Scottish Vocational Qualification (SVQ) 1

SCQF level 5 – Intermediate 2, Standard Grade Credit level, SVQ 2

SCQF level 6 – Higher, SVQ 3

SCQF level 7 – Scottish Higher Education (SHE) level 1, CertHE, Higher National Certificate (HNC), Advanced Higher

SCQF level 8 – SHE level 2, Dip HE, Higher National Diploma (HND), SVQ 4

SCQF level 9 – SHE level 3, Ordinary degrees, Graduate Certificates

SCQF level 10 – SHE level 4, Honours degrees, Graduate Diplomas

SCQF level 11 – SHE level 5, Postgraduate (PG) 1, PgDip, PgCert, MA, MSc, SVQ 5

SCQF level 12 – SHE level 6, PG 2, PhD Doctorate

Student profiler

SCQF level 1 — (Access 1)		
	Generic cognitive skills	Autonomy, accountability and working with others
	There is no separate descriptor for level 1, which covers all provision that comes below the full achievement of level 2.	

SCQF level 2 (Access 2 is an example of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
Demonstrate and/or work with: <ul style="list-style-type: none"> knowledge of simple facts and ideas in a subject/discipline. 	Use rehearsed stages for solving problems. Operate in personal and/or everyday contexts. Take some account, with prompting, of identified consequences of action.	Work alone or with others on simple routine, familiar tasks under frequent and directive supervision. Identify, given simple criteria, some successes and/or failures of the work.

SCQF level 3 (Access 3, Standard Grade Foundation level are examples of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
Demonstrate and/or work with: <ul style="list-style-type: none"> • basic knowledge in a subject/discipline • simple facts and ideas associated with a subject/discipline. 	Identify, with some prompting, a process to deal with a situation or issue. Operate in familiar contexts using given criteria. Take account of some identified consequences of action.	Work alone or with others on simple tasks under frequent supervision. Participate in the setting of goals, timelines etc. Participate in the review of completed work and the identification of ways of improving practices and processes. Identify, given simple criteria, own strengths and weaknesses relative to the work.

SCQF level 4 (Intermediate 1, Standard Grade General level, SVQ 1 are examples of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
Demonstrate and/or work with: <ul style="list-style-type: none"> • basic knowledge in a subject/discipline which is mainly factual • some simple facts and ideas about and associated with a subject/discipline • knowledge of basic processes, materials and terminology 	Use, with guidance, given stages of a problem-solving approach to deal with a situation or issue. Operate in straightforward contexts. Identify and/or take account of some of the consequences of action/inaction.	Work alone or with others on straightforward tasks. Contribute to the setting of goals, timelines etc. Contribute to the review of completed work and offer suggestions for improving practices and processes. Identify own strengths and weaknesses relative to the work.

SCQF level 5 (Intermediate 2, Standard Grade Credit level, SVQ 2 are examples of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others

<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • basic knowledge in a subject/discipline which is mainly factual but has some theoretical component • a range of simple facts and ideas about and associated with a subject/discipline • knowledge and understanding of basic processes, materials and terminology. 	<p>Use a problem-solving approach to deal with a situation or issue which is straightforward in relation to a subject/discipline.</p> <p>Operate in a familiar context, but where there is a need to take account of or use additional information of different kinds, some of which will be theoretical or hypothetical.</p> <p>Use some abstract constructs – eg make generalisations and/or draw conclusions.</p>	<p>Work alone or with others on tasks with minimum supervision.</p> <p>Agree goals and responsibilities for self and/or work team with manager/supervisor.</p> <p>Take leadership responsibility for some tasks.</p> <p>Show an awareness of others' roles, responsibilities and requirements in carrying out work and make a contribution to the evaluation and improvement of practices and processes.</p>
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SCQF level 6 (Higher, SVQ 3 are examples of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • generalised knowledge of a subject/discipline • factual and theoretical knowledge • a range of facts, ideas, properties, materials, terminology, practices, techniques about/associated with a subject/discipline • relate the subject/discipline to a range of practical and/or everyday applications. 	<p>Obtain, organise and use factual and theoretical information in problem solving.</p> <p>Make generalisations and predictions.</p> <p>Draw conclusions and suggest solutions.</p>	<p>Take responsibility for carrying out a range of activities, where the overall goal is clear, under non-directive supervision.</p> <p>Take some supervisory responsibility for the work of others and lead established teams in the implementation of routine work.</p> <p>Manage limited resources within defined and supervised areas of work.</p> <p>Take account of roles and responsibilities related to the tasks being carried out and take a significant role in the evaluation of work and the improvement of practices and processes.</p>

SCQF level 7 (SHE level 1) (CertHE, HNC, Advanced Higher are examples of qualifications at this level)

Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • a broad knowledge of the subject/discipline in general • knowledge that is embedded in the main theories, concepts and principles • an awareness of the evolving/changing nature of knowledge and understanding • an understanding of the difference between explanations based in evidence and/or research and other forms of explanation, and of the importance of this difference. 	<p>Present and evaluate arguments, information and ideas which are routine to the subject/discipline.</p> <p>Use a range of approaches to addressing defined and/or routine problems and issues within familiar contexts.</p>	<p>Exercise some initiative and independence in carrying out defined activities at a professional level.</p> <p>Take supervision in less familiar areas of work.</p> <p>Take some managerial responsibility for the work of others within a defined and supervised structure.</p> <p>Manage limited resources within defined areas of work.</p> <p>Take the lead in implementing agreed plans in familiar or defined contexts.</p> <p>Take account of own and others' roles and responsibilities in carrying out and evaluating tasks.</p> <p>Work with others in support of current professional practice under guidance.</p>

SCQF level 8 (SHE level 2) (DipHE, HND, SVQ 4 are examples of qualifications at this level)

Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • a broad knowledge of the scope, defining features, and main areas of a subject/discipline • detailed knowledge in some areas • understanding of a limited range of core theories, principles and concepts • limited knowledge and understanding of some major current issues and specialisms • an outline knowledge and understanding of research and equivalent scholarly/academic processes. 	<p>Undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues which are within the common understandings of the subject/discipline.</p> <p>Use a range of approaches to formulate evidence-based solutions/responses to defined and/or routine problems/issues.</p> <p>Critically evaluate evidence-based solutions/responses to defined and/or routine problems/issues.</p>	<p>Exercise autonomy and initiative in some activities at a professional level.</p> <p>Take significant managerial or supervisory responsibility for the work of others in defined areas of work.</p> <p>Manage resources within defined areas of work.</p> <p>Take the lead on planning in familiar or defined contexts.</p> <p>Take continuing account of own and others' roles, responsibilities and contributions in carrying out and evaluating tasks.</p> <p>Work in support of current professional practice under guidance.</p> <p>Deal with ethical and professional issues in accordance with current professional and/or ethical codes or practices under guidance.</p>

SCQF level 9 (SHE level 3) (Ordinary degrees, Graduate Certificates are examples of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • a broad and integrated knowledge and understanding of the scope, main areas and boundaries of a subject/discipline • a critical understanding of a selection of the principal theories, principles, concepts and terminology • knowledge that is detailed in some areas and/or knowledge of one or more specialisms that are informed by forefront developments. 	<p>Undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues.</p> <p>Identify and analyse routine professional problems and issues.</p> <p>Draw on a range of sources in making judgements.</p>	<p>Exercise autonomy and initiative in some activities at a professional level.</p> <p>Take some responsibility for the work of others and for a range of resources.</p> <p>Practise in ways which take account of own and others' roles and responsibilities.</p> <p>Work under guidance with qualified practitioners.</p> <p>Deal with ethical and professional issues in accordance with current professional and/or ethical codes or practices, seeking guidance where appropriate.</p>

SCQF level 10 (SHE level 4) (honours degrees, Graduate Diplomas are examples of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • knowledge that covers and integrates most of the principal areas, features, boundaries, terminology and conventions of a subject/discipline • a critical understanding of the principal theories, concepts and principles • detailed knowledge and understanding in one or more specialisms, some of which is informed by or at the forefront of a subject/discipline • knowledge and understanding of the ways in which the subject/discipline is developed, including a range of established techniques of enquiry or research methodologies. 	<p>Critically identify, define, conceptualise and analyse complex/professional-level problems and issues.</p> <p>Offer professional-level insights, interpretations and solutions to problems and issues.</p> <p>Critically review and consolidate knowledge, skills and practices and thinking in a subject/discipline.</p> <p>Demonstrate some originality and creativity in dealing with professional-level issues.</p> <p>Make judgements where data/information is limited or comes from a range of sources.</p>	<p>Exercise autonomy and initiative in professional/equivalent activities.</p> <p>Take significant responsibility for the work of others and for a range of resources.</p> <p>Practise in ways which show a clear awareness of own and others' roles and responsibilities.</p> <p>Work effectively under guidance in a peer relationship with qualified practitioners.</p> <p>Work with others to bring about change, development and/or new thinking.</p> <p>Deal with complex ethical and professional issues in accordance with current professional and/or ethical codes or practices.</p> <p>Recognise the limits of these codes and seek guidance where appropriate.</p>

SCQF level 11 (SHE level 5, PG 1) (PgDip, PgCert, MA, MSc, SVQ 5 are examples of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • knowledge that covers and integrates most, if not all, of the main areas of a subject/discipline – including their features, boundaries, terminology and conventions • a critical understanding of the principal theories, principles and concepts • a critical understanding of a range of specialised theories, principles and concepts • extensive, detailed and critical knowledge and understanding in one or more specialisms, much of which is at or informed by developments at the forefront • critical awareness of current issues in a subject/discipline and one or more specialisms. 	<p>Apply critical analysis, evaluation and synthesis to issues which are at the forefront or informed by developments at the forefront of a subject/discipline.</p> <p>Identify, conceptualise and define new and abstract problems and issues.</p> <p>Develop original and creative responses to problems and issues.</p> <p>Critically review, consolidate and extend knowledge, skills practices and thinking in a subject/discipline.</p> <p>Deal with complex issues and make informed judgements in situations in the absence of complete or consistent data/information.</p>	<p>Exercise substantial autonomy and initiative in professional and equivalent activities.</p> <p>Take responsibility for own work and/or significant responsibility for the work of others.</p> <p>Take responsibility for a significant range of resources.</p> <p>Demonstrate leadership and/or initiative and make an identifiable contribution to change and development.</p> <p>Practise in ways which draw on critical reflection on own and others' roles and responsibilities.</p> <p>Deal with complex ethical and professional issues and make informed judgements on issues not addressed by current professional and/or ethical codes or practices.</p>

SCQF level 12 (SHE level 6, PG 2) (PhD Doctorate is an example of qualifications at this level)		
Knowledge and understanding	Generic cognitive skills	Autonomy, accountability and working with others
<p>Demonstrate and/or work with:</p> <ul style="list-style-type: none"> • a critical overview of a subject/discipline, including critical understanding of the principal theories, principles and concepts • a critical, detailed and often leading knowledge and understanding at the forefront of one or more specialisms • knowledge and understanding that is generated through personal research or equivalent work which makes a significant contribution to the development of the subject/discipline. 	<p>Apply a constant and integrated approach to critical analysis, evaluation and synthesis of new and complex ideas, information and issues.</p> <p>Identify, conceptualise and offer original and creative insights into new, complex and abstract ideas, information and issues.</p> <p>Develop creative and original responses to problems and issues.</p> <p>Deal with very complex and/or new issues and make informed judgements in the absence of complete or consistent data/information.</p>	<p>Exercise a high level of autonomy and initiative in professional and equivalent activities.</p> <p>Take full responsibility for own work and/or significant responsibility for the work of others.</p> <p>Demonstrate leadership and/or originality in tackling and solving problems and issues.</p> <p>Work in ways which are reflective, self-critical and based on research/evidence.</p> <p>Deal with complex ethical and professional issues.</p> <p>Make informed judgements on new and emerging issues not addressed by current professional and/or ethical codes or practices.</p>

Appendix 10: Case-study summaries

QAA Enhancement Theme – Flexible Delivery Project

CASE-STUDY SUMMARIES A to D

These four case studies contain the responses to the researchers' questions. To see how they have been analysed by the researchers, please consult the project literature review (Normand and Littlejohn, 2006).

Case study A

Programme name	Postgraduate Certificate
SCQF exit level/SCOTCAT (Scottish credit accumulation and transfer scheme) points	SCQF level 10
Faculty	Faculty of Education and Social Work
Institution	University of Dundee
Programme originator/developer	T-L Team and OM
Contact name	
Contact email	
Programme overview	<i>Programme aims/outcomes, market, previous delivery methods, average cohort size, staff-student ratio (SSR), duration of programme, funding stream</i>
<p>Programme aims to:</p> <ul style="list-style-type: none"> • provide teachers in the specialisms in short supply – namely English, maths, physics, chemistry and modern languages • provide student teachers with professional and inter-professional understandings suited to working in Scottish schools • meet the needs of participants in a flexible way which reduces or removes the barriers of time and distance. <p>The market is graduates with a first degree containing enough subject content to meet entry requirements. The course is only in its second year and is still growing in student numbers: year one, 27 students; year two, 63 students. Works on a SSR of 20:1. The programme is offered full-time over 36 weeks, or can be studied over two years or 72 weeks.</p> <p>Course fees are paid directly by the Scottish Executive Education Department, with further funding coming from the Scottish Funding Council (SFC).</p>	

Delivery mechanism	<i>Campus based, distance paper based, web based, student support arrangements</i>
<p>The programme is a blend of 'face-to-face' lectures/seminars, on-line learning and school-based practice. This involves the equivalent of 18 weeks' school experience, seven weeks' in-faculty 'face to face, and the equivalent of 11 weeks' on-line study. The University uses the commercial web-based package 'Blackboard' as its virtual learning environment. Students are encouraged to communicate through discussion fora. The fora are monitored by staff, and feedback is given as staff feel appropriate. Students are allocated two tutors – one for generic learning and teaching, the other for subject-specific issues. Staff support students at a distance and via the VLE. Another important element is peer support, and students are encouraged to provide constructive feedback to each other. One of the mechanisms for doing this is through 'file exchange', whereby students post files of their work and receive peer feedback.</p> <p>The students are put into mixed subject groups for generic input, and also specific subject-area groups. This gives students opportunities to develop face-to-face relationships, which we feel are essential in encouraging on-line dialogue. In our experience, people are less likely to post to 'faceless' on-line discussion groups.</p>	
Main flexible features and rationale	<i>Flexible in terms of time, pace, structure, location, entry, exit, course content? Rationale for developing the programme?</i>
<p>The programme provides flexibility in terms of location and time. The students only have to be in faculty for a total of seven weeks, and never any longer than two weeks in any given block. The seven weeks also have a degree of flexibility in that they can be spread over two years. The initial two weeks, however, are fixed and compulsory. The 11 weeks' on-line can be at a place of the student's choosing, although they are welcome to use the University's facilities if they so wish. The majority of the students follow the one-year full-time route, with only 3/4 students choosing to complete the course over a two-year period.</p> <p>The rationale for the course was to give flexible entry to Initial Teacher Education (ITE) for students for reasons of distance, family or work commitments to be able to enter ITE. The majority of the cohort comes from the east central belt of Scotland, with only a few from geographically remote areas. In terms of using local resources to add capacity to geographically remote teaching areas, we have had limited success; but in terms of addressing subject shortage areas we have had a greater impact by more than doubling our intake.</p> <p>We do have a small number of students who chose to study at Dundee because the flexible format of the course perfectly matched their needs.</p>	
Learning and teaching approaches	<i>How are learning and teaching strategies structured? Who supports the students? Are core materials provided centrally, shared, or individually developed? Who supports you and the programme team?</i>
<p>The materials are organised and displayed on the VLE. This includes in-faculty inputs. The majority of staff post the materials on the VLE. The allocation of who takes charge of what is agreed at team meetings. All staff have access to each other's materials and provide feedback</p>	

or use another's work as a model for developing student materials. Usually, materials are developed individually but there are several examples of collaborative working and team teaching.

There are three modules on the VLE linking to the programme. In each module there are two folders of activities. Red activities are to be completed by halfway through school experience, and green activities by end of school experience/return to faculty. The activities make full use of web-based resources in terms of the types of files used and multimedia approaches.

Programme is supported at faculty level by Dean and Head of Department. In-faculty support is given by team members. IT support is given by the University's IT Services and Learning Enhancement Unit.

Assessment strategies and arrangements

Are assessment strategies considered in terms of meeting flexible demands?

To accommodate students who are following the two-year route, assessment deadlines are adjusted accordingly. There are three main summative assignments – two essays and an electronic portfolio (Ep). Since there is not a final exam, it is easy to adjust assignment dates. However, the assignments involve peer review and feedback, so it is essential to facilitate on-line collaboration. This is partly done by forming generic and subject groups and by group work during in-faculty sessions. The Ep is continuously updated throughout the year, and feedback is received from peers and tutors throughout the year so that individual students can act on the feedback before final submission for formative assessment of the Ep.

Evaluation to date and main changes

How long has the programme run in its present format? How is it evaluated? Are criteria different for flexible delivery? What have been the main changes and why?

The course is only entering its second year. Evaluation of the course has been by external examiner feedback and on-line questionnaires/surveys to participating students and staff. Some of the features of Blackboard are used to analyse the data.

Main changes are:

- 1 Some of the content has been reduced or moved to different parts of the course. This is in response to student feedback re workload and the appropriate timing of some of the inputs.
- 2 Up until now, the students have been provided with wireless-activated laptops. This has allowed us to standardise the software available to the students, which makes it easier to design appropriate inputs, plus there are licence copyright issues. In future it is likely that students will have to provide their own machines, which brings with it a number of technical and administrative problems that have still to be discussed and ironed out.
- 3 School experience is moving to three blocks of six weeks instead of accumulating the equivalent of 18 weeks over a two- year programme. The concern was that students only having small, short-lived bursts of school experience are not being given the opportunity for longer-term planning or experiencing the physical side of teaching consecutively for a

prolonged period.	
Areas of flexibility implemented in the case study	<i>Do you think your programme offers flexibility to students in terms of one or more of the factors listed below? Place an 'x' at any of the relevant choices.</i>
Flexibility related to time: Fixed time ←-----X-----→ Flexible	
1 Times (for starting and finishing course)	←-----X-----→
2 Times (for submitting assignments and interacting within the course)	←-----X-----→
3 Tempo/pace of studying	←----- X -----→
4 Moments of assessment	←----- X -----→
Flexibility related to content: Fixed content ←-----→ Flexible	
5 Topics of the course	←---- X -----→
6 Sequence of different parts of the course	←---- X -----→
7 Orientation of the course (theoretical, practical)	←---- X -----→
8 Key learning materials of the course	←---- X -----→
9 Assessment standards and completion requirements	←---- X -----→
Flexibility related to entry requirements: Fixed requirements ←-----→ Flexible	
10 Conditions for participation	← X -----→ This is a nationally accredited course and there are fixed national entry requirements.

<p>Flexibility related to instructional approach and resources:</p> <p>Fixed pedagogy and resources ←-----→ Flexible</p>	
11 Social organisation of learning (face to face; group; individual)	←-----X-----→
12 Language to be used during the course	← X -----→
13 Learning resources: modality, origin (instructor, learners, library, WWW)	←-----X-----→
14 Instructional organisation of learning (assignments, monitoring)	←-----X-----→
<p>Flexibility related to delivery and logistics:</p> <p>Fixed place and procedures ←-----→ Flexible</p>	
15 Time and place where contact with instructor and other students occur	<p>←-----X-----→</p> <p>I think this is very flexible in terms of on-line support.</p>

16 Methods, technology for obtaining support and making contact	←-----X-----→
17 Types of help, communication available, technology required	←----- X -----→
18 Location, technology for participating in various aspects of the course	←-----X-----→
19 Delivery channels for course information, content, communication <i>Collis and Moonen (2004), 10</i>	←----- X -----→

Case study B

Programme name	BA
SCQF exit level/SCOTCAT points	SCQF level 9
Faculty	Education and Social Work
Institution	University of Dundee
Programme originator/developer	OM
Contact name	
Contact email	
Programme overview	<i>Programme outcomes, market, previous delivery methods, average cohort size, SSR, duration of programme, funding stream</i>
<p>The programme was designed as a distance-learning programme for early childhood professionals working with children from birth to age eight. It was designed as distance learning to enable this workforce to continue working and study for higher qualifications. We have a range of professionals who work in playgroups, nurseries, child and family centres, nurseries in schools, in the public and private sectors, as development officers, FE lecturers, early intervention assistants, support assistants, classroom assistants and overseas personnel who teach children in usually international or British Council-run schools.</p> <p>The programme is roll-on roll-off, although we tend to start participants three times a year. We may start between 25 and 35 depending on the number on the waiting list and staffing. For each level of the programme, students will take two years or two and a half years. They are either self-funding or are funded from their employer or their childcare partnership. The main monies for them come from the workforce development fund. All our modules are SFC funded.</p>	
Delivery mechanism	<i>Campus based, distance paper based, web based, student support arrangements</i>
<p>Paper-based distance learning, with face-to-face delivery if sufficient participants on the same module. Support arrangements are through tutor feedback, tutor email, face-to-face tutorials, telephone tutorials.</p>	
Main flexible features and rationale	<i>Flexible in terms of time, pace, structure, location, entry, exit, course content? Rationale for developing the programme?</i>
<p>Rationale – as above.</p> <p>Flexible in that after core modules, participants have a choice of modules to suit their needs and interests. At level 7 there is no choice, at level 8 there are two core and four options, and at level 9 there are two core and two options. At levels 7 and 8, each participant has 17 weeks to</p>	

<p>complete a module, which is 20 credits. At level 9, they have 30 weeks to complete a module, which is 30 credits. Generally, participants require longer to complete a module, for various reasons.</p> <p>Course content is geared towards early education and focuses on key areas of early childhood values and beliefs. Curriculum: diversity, community issues, social issues, management issues, self-evaluation and reflection.</p>	
<p>Learning and teaching approaches</p>	<p><i>How are learning and teaching strategies structured? Who supports the students? Are core materials provided centrally, shared, or individually developed? Who supports you and the programme team?</i></p>
<p>Learning and teaching is through the materials provided. All modules are produced centrally and are given out with a module and assessment guide. Teaching style is interactive and reflective. The materials are written by the programme leader and others either in the team or bought in.</p> <p>Student support: in addition to the tutors, the key support is the administrator. The team is supported by the administrator. Our materials are produced in-house. There is no other secretarial help.</p>	
<p>Assessment strategies and arrangements</p>	<p><i>Are assessment strategies considered in terms of meeting flexible demands?</i></p>
<p>The assessments are all paper-based and are matched to the learning outcomes of the module. They must meet the assessment criteria. (not sure what you mean by your question?)</p>	
<p>Evaluation to date and main changes</p>	<p><i>How long has the programme run in its present format? How is it evaluated? Are criteria different for flexible delivery? What have been the main changes and why?</i></p>
<p>Four years. Evaluated through feedback from participants after each module, and we have also carried out questionnaires re particular issues. It is also evaluated by the external examiner.</p>	
<p>Areas of flexibility implemented in the case study</p>	<p><i>Do you think your programme offers flexibility to students in terms of one or more of the factors listed below? Place an 'x' at any of the relevant choices.</i></p>
<p>Flexibility related to time:</p> <p>Fixed time ←-----→ Flexible</p>	
<p>1 Times (for starting and finishing course)</p>	<p>Yes</p>

2	Times (for submitting assignments and interacting within the course)	Yes to an extent and within the rules of CPD
3	Tempo/pace of studying	Yes
4	Moments of assessment	Not sure what is meant here
	Flexibility related to content: Fixed content ←-----→ Flexible	
5	Topics of the course	Flexible here – participants can choose aspects even in core
6	Sequence of different parts of the course	Yes
7	Orientation of the course (theoretical, practical)	Yes
8	Key learning materials of the course	Not sure what is meant here
9	Assessment standards and completion requirements	No – they must meet the requirements and assessment criteria
	Flexibility related to entry requirements: Fixed requirements ←-----→ Flexible	
10	Conditions for participation	Fixed
	Flexibility related to instructional approach and resources: Fixed pedagogy and resources ←-----→ Flexible	
11	Social organisation of learning (face to face; group; individual)	Flexible
12	Language to be used during the course	Flexible
13	Learning resources: modality, origin (instructor, learners, library, WWW)	Don't understand the question – participants seek their own sources – they are self-directed learners or grow to be these kinds of people.
14	Instructional organisation of learning	Don't understand the question

(assignments, monitoring)	
Flexibility related to delivery and logistics: Fixed place and procedures ←-----→ Flexible	
15 Time and place where contact with instructor and other students occur	Not at all flexible
16 Methods, technology for obtaining support and making contact	Fixed
17 Types of help, communication available, technology required	As in previous item – email helpful
18 Location, technology for participating in various aspects of the course	No technology required for the course
19 Delivery channels for course information, content, communication <i>Collis and Moonen (2004), 10</i>	Paper based.

Case study C

Programme name	BA (Hons)
SCQF exit level/SCOTCAT points	10
Faculty	Art, Humanities and Social Sciences
Institution	UHI
Programme originator/developer	OM and T-L Team
Contact name	
Contact email	
Programme overview	<i>Programme outcomes, market, previous delivery methods, average cohort size, SSR, duration of programme, funding stream</i>
<p>This is a three-year or four-year (Hons) undergraduate programme leading to the BA. It is a UHI-funded programme taught, assessed and administered by participating colleges and student centres across Scotland. It is delivered to students entirely on-line by VLE (currently WebCT).</p> <p>This is the programme's fourth year of operation. The first year of the Honours programme is due to commence in the session 2006-07.</p> <p>Students on the course typically study eight modules per year, four in each of the two semesters. A significant proportion of the student body (350+) is female, home-based and/or working full or part-time.</p> <p>The course appeals to those who may be geographically remote, those with career interests in children and/or childcare, and anyone able to combine flexible study time with other family, domestic and/or work commitments. Delivered on-line but in other respects a normal academic programme of learning, it enables students to have the greatest flexibility between their home, work and study lives.</p>	

Delivery mechanism	<i>Campus based, distance paper based, web based, student support arrangements</i>
<p>Learning material and study guidance are delivered in most cases entirely by VLE (currently WebCT, soon to be converted to in-house UHI's CLAN VLE).</p> <p>The balance between prescribed and indicative learning material varies according to the module level, with the greater flexibility in content and structure of later modules encouraging more independent, student-led, self-directed learning.</p> <p>Typically, weekly instruction is accompanied by the creation and management of associated discussion areas for comment and exchanges between student-student and student-tutor. This is the on-line equivalent of a meeting in class.</p> <p>Attendance – measured by a posting or by viewing conversations but not participating in the discussion – may be optional. Associated and recommended reading, tasks and activities will also be suggested by the tutor. In some cases, selected texts may be digitised, thereby allowing the ultimate flexible access to on-line viewing.</p> <p>Some modules may include a timetable of scheduled course-related video-conferences. Periodic on-line chat sessions may also be organised – at convenient times and days – to focus group attention on specific aspects of the course (the next essay or the last one, a chapter in a book, a recent news item, etc). Students can and often do organise chat sessions among themselves to focus on something that's bothering them.</p> <p>Student support: Each student also has an assigned local student adviser (SA) who provides ongoing general pastoral support and appropriate study-skills guidance to local groups and/or individuals on a regular (eg weekly) basis. As SAs receive copies of marks and tutors' comments pertinent to their own students over successive years they are well positioned to form holistic pictures of individual developments.</p> <p>In addition to local group and site-related meetings, students have access to normal programme-related course committee and other (all-site) video-conference meetings.</p>	

Main flexible features and rationale	<i>Flexible in terms of time, pace, structure, location, entry, exit, course content? Rationale for developing the programme?</i>
<p>General benefits of on-line delivery:</p> <ul style="list-style-type: none"> • flexibility to adapt the domestic/work routine, eg work patterns to suit early morning/late night study periods, to work in short/long bursts, pacing study with childcare arrangements and short holiday breaks, etc • on-line anonymity and/or development of on-line community – a comfort zone (for some) • advantages of digitised text and/or restricted reading lists • encourages developing of search and research via global information portals. <p>Rationale is per UHI's general inclusiveness policy, perhaps especially in respect of enabling remote Scottish students to gain access to HE opportunities in the growing area of need and demand known as professional childcare.</p>	
Learning and teaching approaches	<i>How are learning and teaching strategies structured? Who supports the students? Are core materials provided centrally, shared, or individually developed? Who supports you and the programme team?</i>
<p>Learning and teaching structures typically vary and are normally designed by the lead tutor of each module. Structural variants depend on a range of factors – module level, learning objectives, method of assessment, delivery style, etc.</p> <p>For student support: see above.</p> <p>Core materials are typically developed, designed and delivered by individual module tutors (occasionally a team may be involved).</p> <p>Support . . . in what sense? There is good technical assistance to call on.</p>	

Assessment strategies and arrangements	<i>Are assessment strategies considered in terms of meeting flexible demands?</i>
<p>Yes – in so far as it is unavoidable to avoid ‘bunching’ assignments within a 15-week semester.</p> <p>External examiners comment favourably on the mix of assessment methods and styles, eg ranging from standard essays and hard-copy reports to on-line seminars, group project work, local investigations, literature reviews, etc.</p>	
Evaluation to date and main changes	<i>How long has the programme run in its present format? How is it evaluated? Are criteria different for flexible delivery? What have been the main changes and why?</i>
<p>Four years.</p> <p>The programme is evaluated according to standard academic procedures – by periodic formal course evaluation, external examiners’ reports, formal student evaluations and informal course questionnaires. Students and staff may raise any issue of concern through the normal channels of course committees, site meetings, SA meetings, etc.</p> <p>The main development has been agreement on an Honours year, with a proposed Aug-Sept 2006-07 start date.</p>	
Areas of flexibility implemented in the case study	<i>Do you think your programme offers flexibility to students in terms of one or more of the factors listed below? Place an ‘x’ at any of the relevant choices.</i>
<p>Flexibility related to time:</p> <p>Fixed time ←-----→Flexible</p>	
1 Times (for starting and finishing course)	We have normal semester start and end dates, and each module has its own assignment submission dates. Within these parameters there is ample flexibility. . .
2 Times (for submitting assignments and interacting within the course)	Assessment fixed, interaction flexible
3 Tempo/pace of studying	X On-line
4 Moments of assessment	

Flexibility related to content: Fixed content ←-----→ Flexible	
5 Topics of the course	
6 Sequence of different parts of the course	
7 Orientation of the course (theoretical, practical)	
8 Key learning materials of the course	X Key resources on-line, much student and staff generated through activity and discussion depending on nature of topic
9 Assessment standards and completion requirements	
Flexibility related to entry requirements: Fixed requirements ←-----→Flexible	
10 Conditions for participation	X Accreditation of prior learning and accreditation of prior experiential learning
Flexibility related to instructional approach and resources: Fixed pedagogy and resources ←-----→Flexible	
11 Social organisation of learning (face-to-face; group; individual)	X Very flexible as regards social and pedagogical structure. Nearly wholly on-line, with some video-conferencing. Some face-to-face support if required/requested.
12 Language to be used during the course	
13 Learning resources: modality, origin (instructor, learners, library, WWW)	X VLE, library, research

14 Instructional organisation of learning (assignments, monitoring)	Assignment submission through VLE
Flexibility related to delivery and logistics: Fixed place and procedures ←-----→ Flexible	
15 Time and place where contact with instructor and other students occur	X On-line
16 Methods, technology for obtaining support and making contact	X VLE, email, phone, face to face, video-conferencing
17 Types of help, communication available, technology required	Phone, Internet
18 Location, technology for participating in various aspects of the course	Home based, college based, learning centre based
19 Delivery channels for course information, content, communication <i>Collis and Moonen (2004), 10</i>	Cyber café within VLE

Case study D

Programme name	MSc
SCQF exit level/SCOTCAT points	Level 11 180 points
Faculty	Health
Institution	UHI Millennium Institute
Programme originator/developer	T-LM
Contact name	
Contact email	
Programme overview	<i>Programme outcomes, market, previous delivery methods, average cohort size, SSR, duration of programme, funding stream</i>
<p>Aims</p> <p>The twin underlying aims of the MSc are to:</p> <ul style="list-style-type: none"> • enhance the professional practice and competence of individual practitioners through a range of educational and training contexts in a learning programme that is based on good practice, systematic and critical reflection on practice and the development of enquiry, analysis and evaluation abilities • contribute to the development of professions (in the area of infection control) working together within the region served by the UHI Millennium Institute, as well as outside that region. <p>Programme learning outcomes</p> <p>On completion of the requisite modules for the award of MSc, or either of the intermediate awards of Postgraduate Certificate or Postgraduate Diploma, participants will be able to:</p> <ul style="list-style-type: none"> • demonstrate awareness and critical evaluation of the theoretical and research-based literature related to their professional practice • demonstrate awareness and critical analysis of current developments, issues and policies relevant to their professional practice • synthesise knowledge of theory and policy initiatives, transform it into personal knowledge by contextualising it, and apply it to their practice • demonstrate awareness and critical analysis of the range of opportunities for using new technologies effectively to support infection control, and demonstrate expertise in their application • appraise the scope for change in their own professional practice, in the institution in which they work, and within their profession • initiate some small-scale changes and improvements in their professional practice • demonstrate expertise in evaluating changes and improvements which they have introduced into their own professional practice. 	

Audience and intended scope of the course

The course is directed at those whose employment may be wholly or partially dependent on specialist infection control knowledge, and who require a holistic and scientifically based knowledge of all aspects of the discipline. The course is designed to increase the participants' ability to deal with the infectious agents they may encounter in their professional practice and to liaise effectively with other professional groups working in adjacent and interdependent areas of infection control. It is designed to appeal to those who are, or aspire to be:

- infection control nurses – hospital and community based
- public health nurses
- infection control doctors
- consultant medical microbiologists
- consultants in public health medicine
- consultants in communicable disease control/consultants in public health medicine
- environmental health officers
- consultant epidemiologists
- sterilisation engineers and disinfection scientists
- primary care nursing staff
- general practitioners (individual modules only).

Student numbers and profile

There have been 251 enquiries since 2001 up until 2004:

139	from Scotland	1	from USA	1	from Portugal
75	from England	1	from Canada	2	from Hong Kong
6	from Wales	1	from Brazil	2	from Kuwait
10	from N Ireland	1	from Nigeria	2	from Saudi Arabia
4	from Eire	1	from India	1	from United Arab Emirates
2	from Australia	1	from Pakistan	1	from Amman

Enquiries come from all parts of the UK (as well as abroad) and cover a wide variety of professionals in infection control. Some students take two modules per year, which will take up to six years to complete the MSc – they, and their employers, see it very much as CPD. Others take four modules per year and will finish their MSc in three years.

Students undertaking the degree

Year	New enrol-	With-drawn	Deferred	Left with CPD	Left with PG Cert/Dip	Returned	Total enrol-
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	ments						ments
2001	20	2	3	1	0	NA	20
2002	16	0	1	3	3 PG Cert	14	30
2003	19	1	?	2	0	29	48
2004	19	1	8	7	2 PG Dip 2 MSc	44	65
2005	28	NA	NA	NA	NA	NA	85

Planned delivery of modules and student numbers

Entry to the programme is recommended to be once in each academic year (September). This is based on the experience of the team during the last three years. The team recommended that all students should take the Micro-organisms and Disease module first, and at present this module is only offered once per year. If students wish to undertake modules as stand-alone, ie for continuing professional development, then these students may enter in September or in February, whenever the module is being delivered. At present, the modules are offered once per year, but when numbers demand it, they could be offered in both semesters.

Proposed student numbers undertaking the MSc

<i>Year</i>	<i>2004-05</i>	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>
Students	40	48	48	48	48
Average * modules	3	3	3	3	3
Research dissertation students	10	8	8	8	8
Research equivalent * modules	4	4	4	4	4
Total student * modules studied	160	176	176	176	176

* Module equivalent of 15 SCOTCAT credits.

These numbers are a balance between the reduction in students who will have completed their MSc and the increase in new students each year.

Average cohort size: 15

Range: 8-20

Staff-student ratio: 1:10, though some staff tutor 20 students if team teaching.

Duration of the degree programme

Owing to the delivery of this course, this will normally be not less than three years and not more than six.

Funding stream

All students either pay themselves, or their employers pay fees.

Delivery mechanism

Campus based, distance paper based, web based, student support arrangements

Mode of delivery

The programme is part-time, with an emphasis on on-line distance learning. The only face-to-face meeting will be at the annual induction weekend at the beginning of the first semester. Although attendance is not mandatory it is highly recommended, so that students are able to receive an overview of the modules they are about to take, help with ICT skills and to meet the tutors, mentors and other learners. Participants will be encouraged to work together, particularly through appropriate on-line technologies, eg electronic mail and discussion boards; there will also be a high level of self-directed learning.

All of these facilities are available within the framework of the virtual learning environment – WebCT – and are established within the UHI network. Materials and direction for learning will be delivered on-line. Provision will also be made for learners to communicate normally with their tutors on a one-to-one basis, or with their tutor and other learners in a group discussion, or with other learners (no tutor) in a ‘common room’ scenario using electronic modes of delivery. These communication methods will mainly be asynchronous, but could be synchronous, depending on the needs of the situation.

When participants enrol, they will be assigned a mentor (also known in other HEIs as a director of studies or student advisor etc) who will offer learning support as and when required, outside of teaching time, via email and/or telephone. The mentor will be a member of staff from one of the colleges within UHI Millennium Institute who will have the relevant experience. It is anticipated that most learners will be working and therefore it is proposed that all contact with tutors, mentors and other learners will be in the evening and/or at weekends.

STUDENT SUPPORT**Introduction**

The roles set out below, and their inter-relation, are recognised by the team to be at the crux of successful delivery of the programme. Each student will meet their mentor, tutor and other learners face to face at the induction weekend before the start of the semester. Learners will be able to have a ‘virtual’ common room on WebCT.

Roles and responsibilities of staff**Mentor support**

Each participant on the course will have a mentor who will provide support throughout the period of study. Because participants are spread across a large geographical area, and because distance learning plays a vital part, effective mentoring will be an important determinant of the wider success of the MSc award. One mentor will normally support all new participants, and one or more mentor(s) will support the remaining students at any one time. The mentor is UHI based and normally has a health background.

The **mentor's** remit will be to:

- support participants to understand the course requirements and programme
- provide personal and professional guidance as and when appropriate
- maintain regular contact to encourage participants to make progress on schedule and to use tutors, fellow students and course team in the event of difficulties
- provide ongoing advice and facilitation in respect of study task demands and the development of the abilities central to the programme
- assist with access to learning and professional resources.

The mentor will be an independent guide whose responsibility is entirely to their course participants. They are not required to report on any aspect of the participants' work, or to report to any other person or group within UHI. What the course team asks of them is that they:

- provide support for the induction session
- be readily accessible to deal with queries, not content-specific
- support the student in understanding the assessment requirements and liaise with the tutor regarding feedback
- become a member of the Mentor's Committee.

Module tutor

The module leader has the responsibility of selecting the appropriate tutor. For each module there will be one module tutor whose remit is to:

- arrange and help to staff the induction to the module
- be readily accessible to deal with module-specific enquiries from participants who have difficulties with the learning materials or learning tasks
- negotiate learning and assessment tasks appropriate to the participant's context
- provide guidance on appropriate learning resources
- coordinate the delivery of the module and organise tutorials on-line as well as email, and discussion boards during the module studies
- provide feedback to students on their work
- assess submitted work.

The tutor will spend approximately two hours per week over 10 weeks holding tutorials on-line and marking assignments in the remaining weeks. In summary, the tutor is required to:

- attend the first evening and a session during the induction weekend; tutor the learners throughout the module
- tutor the students
- give the grades of the learners to the course leader in advance of the examiners' board after first marking assessments, and provide feedback to the learners
- monitor the operation of the module
- attend the external exam board.

Role and responsibilities of learners

The main role of the student is that of an active learner both individually and in group settings. The primary responsibility for students is to own their learning and negotiate academic pathways that best meet their learning needs. They are expected, as mature adults, to take responsibility for their own learning and to inform their mentors and tutors of any circumstances relevant to their academic progress. They are also charged with acting in accordance with the policies and charters of UHI, and particularly to abide by the terms of the code of conduct.

Student guidance

The student support strategy is crucial for the efficiency and effectiveness of the teaching, learning and assessment strategies. While learners draw support from a variety of sources, formal and informal, the programme approach is to recognise that individual circumstances may vary.

There are three distinct stages where guidance and support will be provided:

- 1 Pre-entry guidance** – this is available by post, on-line and telephone. Learners will receive information before the start of the course about UHI, the structure of the course, the ICT requirements and details on how to use the on-line material.
- 2 Induction** – it will be recommended that all learners should attend an induction course over a weekend, in Inverness College, one week before the start of the first module being taken. Induction usually takes place in Inverness once per year before the degree starts, in the last weekend of August. However, for those who are unable to attend, they will have a comparable experience except for the face-to-face contact. This will include:
 - a face-to-face meeting with their tutor, mentor and fellow learners, which has been found to be critical in determining the success of future communication between these individuals if carried out on-line
 - an understanding of the roles and responsibilities of those providing the learner support, ie tutor, mentor, course leader
 - a demonstration of how to work on-line, by tasks set over the weekend which must be completed on-line, communicating with tutor, mentor and fellow learners (this is followed by 'week zero', when activities are set within the Micro-organisms and Disease module in the week between induction and the first week of the content so that the tutor can ensure that all students are able to use the technology before the start of the module)
 - an understanding of what masters level is
 - receiving the student handbook containing all the relevant information on UHI as well as on the course, module details, reading list/reader pack, assessment schedule.
- 3 On-line support and guidance** – the mentor will have responsibility for supporting the learner through the learning process and helping with motivation, whereas the tutor's support is mainly content specific. Any administrative help required by the learner, including technical help, will be referred to the course leader to organise from within UHI.

Main flexible features and rationale

Flexible in terms of time, pace, structure, location, entry, exit, course content? Rationale

All modules take 15 weeks and are delivered in either semester 1 or 2, which start in September or January respectively. Individual modules can be taken for CPD purposes and therefore can be taken when they are offered. If a student wants to enrol on the PG Cert, PG Dip or MSc, then it is recommended that they start in September to take the Micro-organisms and Disease module first, to make sure they develop the underpinning knowledge for other modules.

ADMISSIONS

Entry requirements

UHI follows the procedures set out in the OUVS (Open University Validation Services) Handbook (section G4, *Admission to taught postgraduate programmes*). The procedures set out in this section also comply with the postgraduate regulations for UHI.

Master's programmes

The normal entry requirement for a master's programme is an honours degree of a recognised UK degree-awarding body, or postgraduate diploma, or a professional qualification recognised as equivalent to an honours degree. Other qualifications or experience which demonstrate that candidates possess appropriate knowledge and skills at honours degree standard may be acceptable. Any student enrolling for a module is required to meet the programme's admissions criteria.

Non-standard entry

Registration to the MSc and any individual module may also be open to holders of an ordinary degree, HND or DipHE award, or other professional qualification which is accepted as being of equivalent status, in an appropriate discipline or professional area. Such candidates will, in addition, normally have at least three years of relevant professional experience, ie in relation to education and training. Candidates with formal qualifications below the level of HND who possess substantial experience in an appropriate field, and/or who may be judged to have demonstrated exceptional abilities, may also be admitted to a postgraduate programme.

It is anticipated that some potential candidates who have other vocational qualifications in relevant areas are likely to apply for entry to the MSc. It is also possible that a small number of candidates will be eligible for the programme who do not have equivalent professional and vocational qualifications, but have extended their skills experientially. In all these cases, a key pre-requisite for admission to the course will be that they continue their professional involvement in infection control for the duration of the modules for which they wish to enrol. This is because each module involves some element of enquiry, evaluation or action research which would necessitate the candidate being currently engaged in an appropriate professional activity related to infection control. However, this applies to all candidates.

Admission to the programme will also be on the understanding that applicants have a reasonable expectation that they can fulfil the programme's objectives and achieve the standard required for the award. Applicants will need to provide evidence of personal, professional and educational experience indicating ability to meet the demands of the programme. This will normally include a written statement by the candidate indicating how their

professional experience has prepared them for postgraduate study, and two academic references.

Exit awards

Intermediate awards and exit awards permitted are:

- Postgraduate Certificate
- Postgraduate Diploma
- MSc.

For those who successfully complete fewer credits than the number required for one of the above awards, a transcript will be provided detailing which modules were successfully passed on the MSc degree, along with the number of credits attached for the modules.

In order to obtain a **Postgraduate Certificate**, candidates will be required to complete five core modules: Micro-organisms and Disease; Epidemiology; Host Defence and Protection; Microbiological Standards in Public Health; Decontamination. **Total: 60 M level credits.**

In order to obtain a **Postgraduate Diploma**, candidates will be required to complete the following core modules:

- Micro-organisms and Disease (15 credits)
- Epidemiology (15 credits)
- Host Defence and Protection (15 credits)
- Microbiological Standards in Public Health (7.5 credits)
- Decontamination (7.5 credits)
- Public Health Law and Infection Control Organisation (15 credits)
- Integration Module (15 credits)

And two from the following five options:

- Upgrading Infection Control (15 credits)
- Food and Environmental Hazards (15 credits)
- Infection Control in the Community (15 credits)
- Control and Administration of Decontamination (15 credits)
- HCAI (healthcare-associated infection) Surveillance (15 credits)

Total: 120 M level credits.

In order to obtain an **MSc degree**, candidates will be required to complete the dissertation module (60 credits), which reflects their individual circumstances. **Total: 180 M level credits.**

RATIONALE

Background to the need for an educational programme in this area, and to the

collaboration between UHI and the Scottish Centre for Infection and Environmental Health (SCIEH) in its development

Infection control in the UK has, in recent years, achieved a high priority in the minds of the public, politicians, media and local authority and healthcare workers. As a consequence, there has been a growing recognition by most professions, professional practitioners and their employers of the need for CPD and education specific to the subject area.

Background

Healthcare-associated infection (HAI) is a priority patients' health and safety issue. The prevention and control of HAI is important, in terms both of the safety and well-being of patients and of the resources consumed by these potentially avoidable infections. HAIs are infections associated with admission to any healthcare facility. The launch of the Ministerial Action Plan for Preventing HAI and the establishment of the HAI Task Force (which has the remit to coordinate implementation of the action plan, monitor levels of HAI and monitor and report on progress to the Minister) now lead the way for infection prevention and control in Scotland. National surveillance activities underpin the action plan, as they provide data that highlights the problem of HAI.

The problem of HAI has been growing and is not yet fully under control, albeit significant progress has been made in meeting standards, including those that have been set by NHS Quality Improvement Scotland. The ability to ensure that all disciplines are engaged in evidence-based and best-practice infection prevention and control activities in order to meet the standards that have been set depends on the provision of key guidance.

Guidance is provided from a range of sources, including local and national expertise and organisations, and in addition educational establishments. The role of SCIEH in particular is to protect the health of the Scottish population by providing the best possible information and expert support, which is provided by a number of sections, including one dedicated to HAI. The HAI section's coordination of the national surveillance programme and antimicrobial resistance programme, as well as providing expert support, advice and guidance on infection control and decontamination, is fundamental to national activities. Their significant contribution to the work of the Task Force and to associated educational activities is also a core function at this time.

The importance of training healthcare professionals at all levels on aspects of HAI is recognised as a national priority, at this time and for the foreseeable future. Without education and training, the demands of this high-priority area within healthcare cannot be met. Collaborative work between national expert organisations such as SCIEH and academic institutions, to ensure that high-quality education and training on HAI are provided, is welcomed and valued by all. In response to this, a new suite of courses has been developed by UHI Millennium Institute and SCIEH. This has been designed to enhance the ability of participants to deal safely, effectively and economically with the infection-related problems they may encounter in their professional practice. The course document covers the postgraduate modules and two CPD undergraduate modules. The suite will of course provide an education package suitable for specialist education and continuing professional development for all those dealing with infection in both hospitals and the community.

Summary of intention

- To develop and deliver a package/course which will raise awareness of the problems associated with infection in hospitals and in the community, to enable people to deal with

them safely.

- To ensure that such a course consists of various modules suitable for the further education and training of all grades of healthcare workers, environmental health workers, public service workers and their managers.
- To ensure that the modules which are developed are based on the most up-to-date scientific evidence related to the control of infection and environmental hazards in Scotland, and include current legal requirements related to their management.

Rationale for the structure of the MSc programme

One of the priorities which the modular structure addresses is to identify and respond effectively to different types of prior learning, experiential or otherwise. It enables participants to construct programmes of study within the MSc programme which are tailored to their specific needs. This will allow participants to take individual modules, or modules worth a total of 60 credits for a Postgraduate Certificate, or modules worth a total of 120 credits to obtain a Postgraduate Diploma, or to complete the MSc, worth 180 credits. It is important to appreciate the variety of professions with different backgrounds who will work together on this course.

A modular structure has also been chosen because it enables participants to develop at their own pace professionally, academically and personally. The modular structure, with three distinct awards, also allows participants to approach the programme in different ways, eg to take just one module, or study for the Postgraduate Certificate, Postgraduate Diploma or MSc. In these key respects the programme is student-driven. The flexible modular structure also enables UHI to extend the module bank in response to changing demands over time. There is, however, a risk with a flexible, modular structure that the learning experience across a selection of modules can become fragmented, particularly if the student chooses not to complete in the shortest possible time. We have, therefore, adopted a balance between flexibility and coherence of learning by including the majority of modules within each of the three awards as mandatory, with the options being related to application to the workplace. These modules have been designed to have general relevance across a wide range of professional needs and areas of activity.

Learning and teaching approaches

How are learning and teaching strategies structured? Who supports the students? Are core materials provided centrally, shared, or individually developed? Who supports you and the programme team?

TEACHING AND LEARNING STRATEGIES

Background

The following factors have influenced the course team's thinking about teaching and learning:

- 1 It is important that teaching and learning strategies relate to those which participants will be encouraged to use in their own professional practice. While introductions to good practice and appropriate theoretical and research-based literature are an important feature of the course, the main role of tutors is to facilitate learning. This will be done by assisting and encouraging participants to test their own ideas, experiences and assumptions against current practice and thinking. They will be encouraged to experiment, critically evaluate and, if appropriate, implement new approaches where improvements can be demonstrated. This implies a close partnership between tutors and participants, where new ideas can be

developed in professional practice and where different solutions can be applied to old problems.

- 2 Professional development within this area has obvious implications for practice. This modular course is designed to meet the needs of practitioners working in a wide range of contexts. Participants will themselves become contributors of course material as they systematically and critically reflect on their own professional practice. As this is a vital ingredient of the course, tutors will need to be both flexible and willing to adjust their input to the particular circumstances of the groups they work with.
- 3 It is important that a learning environment is created for participants where they are encouraged to:
 - reflect systematically on their own practice
 - critically analyse and challenge the assumptions underlying their professional practice
 - contextualise their understanding by enquiring how the potential for change is constrained or enhanced by the organisation in which they work.To ensure that this happens, participants will be expected to:
 - critically review relevant policy documents
 - 'situate' their self-evaluation and action research activities within the broader institutional and professional context
 - engage in a reflective dialogue with tutors and other participants through tutorials and contributions to electronic conferences and bulletin boards.
- 4 The majority of the course team members are actively undertaking research as part of their work requirements or as part of continuing professional development. This is an important influence on the quality of the material produced and the support provided for the learner. The team members are committed to continue to use their research to enhance the teaching and learning aspects of this course.
- 5 The course team will deliver the MSc through distance-learning strategies. To facilitate this, a range of technologies and technology networks will be used. New information and communication technologies place more responsibility for learning on the learner, and require teaching strategies that facilitate and supplement learning. Email will be used to maintain links between the course team members (who are in different locations), and to facilitate links between tutors and course participants. It will also enable course participants to communicate and collaborate with each other and to set up self-help groups (see below).

Strategies

The design and delivery model for the MSc is for an on-line course. In this respect the course is centred on the learning experience of the student and the strategy is that of supported learning. This strategy is intended to maximise the opportunities for efficiency and effectiveness provided by UHI and to respond to the paradigm shifts influencing higher education.

Course delivery

The following is a representation of how this degree will be offered using on-line delivery methods. The intention is to provide sufficient dedicated opportunity for each module to be organised within, while allowing for the flexibility and variety of delivery that will maximise the efficient and effective provision of teaching and learning. It is anticipated that this 'shell' will evolve depending on the numbers, mix and needs of students, and it will undoubtedly be subject to review, negotiation and revision based on evaluation, both formative and summative.

Accordingly, the following should be seen as a guide and not prescriptive.

The teaching and learning strategies aim for a balance between independent study, where participants have plenty of autonomy, and tutor-guided study. The Course Committee will be the means of ensuring that this process works. Each SCOTCAT credit is equivalent to 10 hours of 'academic effort', and thus a 15-credit module will take 150 hours. This does not include mentor support, which will be approximately eight hours per semester for four students with the distribution of time depending on individual needs. Within each module there will be individual learning, group-based learning and tutor-led learning. The emerging pattern of study time, as a guide for participants on the majority of 15-credit modules, will vary depending on the module. It will include:

- *Independent self-study* – this will involve working through on-line materials for this particular module, on-line searches and reading (both tutor-directed and self-directed).
- *On-line interactions* – this will involve the learner in discussion of relevant topics for the course and will be mainly asynchronous. The module tutor will mainly be involved with asynchronous presentations, and for some modules the individual contributions will be assessed. Asynchronous sessions may involve subgroups of students to be set milestone activities to work on, and the individual work will be shared among the group via email. It is unlikely that module tutors will be party to these discussions, but there may be one-to-one email. It is expected that the tutor will be involved in approximately 20 hours of interaction with the students over the semester. The tutor will set the guidelines at the beginning as to when the communication will occur, and that they will respond to questions twice per week, ie a set evening and time by email.

In addition, the MSc programme will emphasise:

- the use of appropriate technologies to support individual and group-based learning through distance learning
- the relation of good practice and current theoretical and research-based thinking to the specific work-related circumstances of participants
- the promotion of professional development through enquiry-based learning
- responding to a variety of learning styles which reflect the different backgrounds and work-related demands of participants
- the provision of effective support systems which promote independent learning
- the flexible organisation of teaching and learning to facilitate access and choice, and to meet the different circumstances and needs of individual participants
- the creation of a continuing professional development culture and lifelong learning within participants.

Tutors with expert knowledge are contracted as tutors and support the students. Materials are written by the experts and then transferred on-line by an IT specialist. The material is available to the students on-line, with copies on CD if required. Some of the modules are shared with a related MSc.

The team now has administrative support, which has helped considerably, and it is proposed that an assistant programme leader, who will have a role as a student co-ordinator, will be in place to help the programme leader in 2006-07 – this is being piloted first with a new related

MSc.

Assessment strategies and arrangements

Are assessment strategies considered in terms of meeting flexible demands?

ASSESSMENT

All assessments are continuously based, but still have set deadlines.

Introduction

The assessment strategy for this programme has been designed to recognise the learning of professional and mature participants. It provides guidance to both tutors and participants on the standards which will be applied to assessment, and on the procedures adopted to ensure, through careful monitoring, that assessment is seen to be both fair and reliable. It is important that the learner will be given the opportunity to assess progress, knowledge and understanding through a series of short-answer questions specifically applicable to the content learned (either through formative or summative assessment) as well as be assessed at a more analytical and evaluative level.

UHI's postgraduate regulations have informed the assessment strategy and the process by which the course team will ensure consistency and quality of assessment in the early stages of the MSc programme. The team recognises that experience of assessing at master's level needs to be acquired and shared by all team members. Two external examiners have been appointed to the programme, in accordance with UHI regulations. These will be members of the Examination Board.

Modules will be subject to two kinds of assessment criteria:

- specific criteria, which are indicated in the module descriptors
- general criteria, which will apply to all work submitted.

In order to pass a module, participants will be required to demonstrate that the work submitted has met the stated learning outcomes of the module. Outstanding performance in meeting one outcome will not compensate for a failure to meet other stated learning outcomes. The work must also meet the general criteria set out below.

Criteria for assessment

Specific criteria for assessment – these are stated in each of the module descriptors. It is important that the learner sees how the learning outcomes map onto the assessments, so marking criteria are produced.

General criteria for assessment – all assessed work will be required to demonstrate that the standard achieved is at master's level. To achieve a satisfactory standard, work must display:

- an ability to integrate theoretical understanding with practical experience when reflecting on professional practice
- a critical grasp of the concepts and principles related to the module through appropriate

use of language, analysis of situations, response to problems and, where appropriate, choice of research methodology

- an ability to find, comprehend and critically analyse relevant information from published literature
- an ability to locate, interpret and critically evaluate data.

In addition, the following criteria must be met:

- material for assessment must be presented in a clear, structured and coherent form
- sources of evidence must be cited in a form which facilitates easy access by others of original sources (normally by using the Harvard referencing system)
- clarity and accuracy in the use of language.

Evaluation to date and main changes

How long has the programme run in its present format? How is it evaluated? Are criteria different for flexible delivery? What have been the main changes and why?

The programme is in its fifth year of delivery. It was revalidated in May 2004 with no major changes. The main alterations have been in changing learning outcomes and assessments as the modules develop. The module teams have felt that some of the original learning outcomes were perhaps too prescriptive.

EVALUATION

Introduction

In discussing evaluation procedures, the course team has recognised the need for:

- a mechanism that delivers feedback sooner than at the end of modules
- use of objective formative evaluation
- a mechanism that allows the team to review what is an innovative and demanding course
- a means to respond, from the outset, to outspoken and demanding learners or those with special needs
- rigorous self-evaluation by the team.

An evaluation strategy

The MSc course is innovative and demanding. A scheme of formative evaluation is therefore extremely important so that improvements can be made both during module delivery (refinement and re-tuning) and for the next cohort of participants. The course team is committed to evaluating progress towards, and achievement of, the learning outcomes for the modules (including the appropriateness of these learning outcomes). However, the team also considers it important to evaluate:

- 1 the learning experiences of participants during the module
- 2 participants' commitment to the principles and values of the course
- 3 the effectiveness of the electronic learning environment
- 4 the functioning of the mentor scheme and library support
- 5 the long-term impact of this course on UHI as a developing organisation.

Participants, module tutors, mentors and others (eg library and computer support staff) will all be involved as partners in the evaluation procedures.

The evaluation strategy incorporates a number of levels:

- 1 The first level defines ongoing feedback obtained from participants (individually and in groups) at regular intervals during modules, using email. The feedback is collated from the discussion board. This level of feedback represents good teaching practice.
- 2 The second level entails an end-of-module evaluation. This is carried out by students using an electronic questionnaire. Tutors are asked to present their reports on their evaluation of the module after it has been delivered to the Course Committee. At this level, learners and staff (separately and in joint discussions) all contribute to the evaluation process.
- 3 Finally, all the evaluation data itemised above, including learners' records of performance, are brought together in a final end-of-year evaluation report – the annual course report.

Areas of flexibility implemented in the case study	<i>Do you think your programme offers flexibility to students in terms of one or more of the factors listed below? Place an 'x' at any of the relevant choices.</i>
Flexibility related to time: Fixed time ←-----→ Flexible	
1 Times (for starting and finishing course)	X for CPD
2 Times (for submitting assignments and interacting within the course)	
3 Tempo/pace of studying	
4 Moments of assessment	
Flexibility related to content: Fixed content ←-----→ Flexible	
5 Topics of the course	X
6 Sequence of different parts of the course	X

7	Orientation of the course (theoretical, practical)	
8	Key learning materials of the course	X
9	Assessment standards and completion requirements	
	Flexibility related to entry requirements: Fixed requirements ←-----→ Flexible	
10	Conditions for participation	X
	Flexibility related to instructional approach and resources: Fixed pedagogy and resources ←-----→ Flexible	
11	Social organisation of learning (face to face; group; individual)	X
12	Language to be used during the course	
13	Learning resources: modality, origin (instructor, learners, library, WWW)	X
14	Instructional organisation of learning (assignments, monitoring)	
	Flexibility related to delivery and logistics: Fixed place and procedures←-----→ Flexible	
15	Time and place where contact with instructor and other students occur	X
16	Methods, technology for obtaining support and making contact	X
17	Types of help, communication available, technology required	X
18	Location, technology for participating in various aspects of the course	X

19 Delivery channels for course information, content, communication <i>Collis and Moonen (2004), 10</i>	X
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Appendix 11: The organisational model

Modelling organisational frameworks for integrated e-learning: the experience of the TrustDR project

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Abstract

This paper discusses the need for a way to model the organisational frameworks required to integrate e-learning into institutions and the potential benefits of doing so. A shareable and adaptable general-purpose model of integrated e-learning is introduced, based on recent research. An example of the model being applied is given in a real-life context: the TrustDR project funded by JISC (Joint Information Services Committee), which is examining practical ways of introducing digital rights management (DRM) systems into the UK educational sector for learning object repositories. Finally, some ideas for further development are presented.

1 Introduction – the current situation and need for a model

The TrustDR project is seeking to understand the problems associated with managing intellectual property rights (IPR) in institutional repositories of learning objects, in order to develop practical solutions for developing DRM systems. More information about the project can be found at: <http://www.uhi.ac.uk/lis/projects/trustdr/>

In scoping the project outputs we had to map the complex legal and technical aspects of DRM requirements to the actual working reality of equally complex institutions. It quickly became apparent that this was not going to be a trivial task and that the project team needed some method to capture and share meaning across a variety of domains. It also became clear to us that implementing DRM in learning materials in educational institutions shared the same organisational problems experienced by the e-learning community.

Many researchers and practitioners are coming to the conclusion that the real challenge in successfully implementing e-learning is changing the structures and cultures of our institutions so that they can effectively implement e-learning and flexible learning [1], [2], [3], [4], [5].

To engage in these kinds of task in the corporate world would be considered a classic example of ‘process change’ and therefore a difficult and often risky proposition. To do the same in educational institutions such as universities, which are loosely structured and where the actors enjoy a large degree of autonomy over their teaching organisation and practice, also represents a quite profound challenge. Not surprisingly the results to date are generally acknowledged as having been disappointing:

‘The current situation can best be described as high-level ambitions with poor implementation.’ (van der Klink and Jochems [6])

Casey et al [7] give a useful overview of the challenges that learning objects and e-learning etc pose to institutional structures and professional cultures. As Carol Twigg

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[4] in the USA has observed, e-learning has tended to remain as a 'bolt-on' to existing institutional structures and processes, and is therefore unable to realise its full potential. The impact of e-learning and management information systems, as well as the move to more flexible and learner-centred education [8], contain very different imperatives and organisational models which place a greater premium on the more rapid and accurate communication of information from the different parts of the institution in a more coordinated way than before. The new technologies in particular can forcefully bring to the surface aspects of existing institutional structures and cultures that have hitherto remained informal and invisible (a reification); Pollock and Cornford [9] have produced a useful analysis of this phenomenon. Even cutting-edge e-learning providers such as the University of Southern Queensland in Australia [5] are having difficulty in keeping up with the degree of change required, and report having to resort to 'work-arounds' to keep their provision going while the institution tries to catch up with the demands of a more flexible and student-centred curriculum.

Until now little coherent planning or analysis has gone into adopting e-learning. Generally the pattern has been to try to do the same thing faster, rather like the response of the American Pony Express mail service to the development of the railroads; they bought faster horses in larger numbers [4]. Similarly, we should not be seeking to mimic traditional patterns of education with technology – the real challenge is what to change and how to do it. This requires a holistic approach from the outset, and recognition that the use of technology is not just an adjunct but requires fundamental change. This in turn demands some form of analysis and planning exercise before making major commitments.

In this confused situation we need help to understand the 'problem space' that e-learning represents. It would be very useful if the different actors involved could use a model as a way of sharing and negotiating meaning across the boundaries of their 'communities of practice' [10], especially if those actors have traditionally had little or no meaningful communication or negotiation in the past – as is often the case in educational institutions. For our purposes the model should be:

- simple and easy to grasp – easy definitions
- adaptable and extendable – ie facilitate customisation to local contexts
- have some level of shared abstraction that is meaningful across the different groups, thus hopefully providing a 'bridge' for the negotiation and sharing of meaning
- support textual and graphical representations.

2 What to model and why?

The short answer to this question is that in order to understand how to successfully implement e-learning in our organisations we need to understand how they work in the first place in order to change them effectively. Clearly, accepting the 'official' explanation of how these types of organisation function is inadequate. This explains the healthy trade in senior management employing external consultants in order to understand their own organisations. We need to move beyond this type of 'episodic' organisational learning and development to a more continuous 'in-house' process. To do this we need to know how people conceptualise their roles in the organisation – the reality is often far from the official line and dominated by a 'silo mentality', usually overlaid with a rich local folklore.

Singleton [11] comments that this state of affairs is common in large organisations and that the central service departments such as computer services and information services faced with designing an e-learning infrastructure will try their best, but are destined to deliver a technical solution to what is essentially an educational problem:

‘Hardware systems tend to be dominated by engineering thinking, and macro-systems are dominated by economic thinking.’

As an aside, we could add that putting these kinds of service departments in charge of educational strategy clearly tells us a lot about the deficiencies of the educational philosophy of the institutions concerned.

The drive towards the kind of analysis of workplaces that we are advocating derives from systems theory. Yet such an approach to management and planning is often very difficult because the individuals at different levels in an organisation find it hard to conceive of the ‘bigger picture’ because of the local detail of their own situations and working cultures.

To overcome this obstacle, modern systems theory seems to offer some help. It provides some useful analytical tools for identifying and understanding the dynamic relations between the factors we have been discussing in this paper. Senge and Sterman [12] develop this theme in the context of organisational learning – a concept which is growing in interest – and it is worth briefly looking at some of their recommendations. They propose a 3-stage process for developing a better understanding of how an organisation actually works by the people within it:

- 1/ *Mapping mental models* – explicating and structuring assumptions via systems models
- 2/ *Challenging mental models* – revealing inconsistencies in assumptions
- 3/ *Improving mental models* – continually extending and testing mental models.’

They make the important point that flaws in the understanding of how an organisation works cannot be corrected until they are made explicit, which is the purpose of the modelling exercise. There is no reason to think that such an exercise could not be applied to higher education. Ramsden [13] more or less says the same in the context of higher education teaching:

‘Half the difficulty with doing it better is knowing what the real problem is.’

The main benefit of this kind of exercise in education would be in the process of constructing a qualitative model of e-learning that would provide a means of gaining some shared insight and understanding at a personal and institutional level, which would support the kind of exercise recommended by Senge and Sterman [12] above. Corben et al [14] are clear about the benefits of this kind of process, which they describe as ‘qualitative mapping’:

‘The method forces rigorous thinking and provides a good compromise between the context-free approaches of most high-level approaches to change management, and the detail and clutter of most low-level approaches to business process re-engineering.’

3 A useful model

First, a warning about models and indeed all representations of complex organisations – they are fictions and should not be mistaken for reality (a common mistake in project management, for instance). But they are useful fictions if they allow us to get closer and understand the reality of what we are examining. The model presented here is a useful generalisation; it has to be adapted and ‘tweaked’ to the specifics of a local situation. As we shall show, it can be the source of a variety of useful analysis and communication tools. Potential uses are as numerous as the variety of contexts under examination, but some stand out: ‘round-table’ discussion aids, planning tools and a useful form of ‘institutional memory’. One final warning: no model or tool can make individuals or departments communicate and cooperate, and

the mere application of the model should not be confused with improvements in the organisation. In other words, this model is not a panacea to make dysfunctional organisations whole again, but if used correctly can help to identify those aspects of the organisation that need to be changed.

In developing this model we have found the ideas, approaches and concepts in *Integrated E-Learning* introduced by Jochems, Merriënboer and Koper [2] very useful, especially those of van der Klink and Jochems relating to organisational issues [6]. This model also draws on recent work by Collis and Moonen [1] and Normand and Littlejohn [15]. All these researchers propose analysing and viewing the functional institutional structures at three levels to situate the perspectives of the relevant 'actors' who are involved in providing and supporting e-learning in an institution. In addition, van der Klink and Jochems [6] suggest adopting four 'perspectives' at each level. On this conceptual basis we have come up with a simple yet comprehensive organisational model that is intuitive and can be easily adapted and extended to describe most educational institutions.

3.1 Three levels in the organisation

Three important hierarchical levels of actors from within the institutional provider need to inform our exploration and understanding of the implementation of e-learning and flexible learning in reality.

Institutional management (IM): management bodies (boards, senates, courts), principals, pro-vice chancellors, institutional secretaries, service unit managers (estates, information services, registry). These are the senior figures directing the strategy and direction the institution is following; deciding on the specific technical infrastructure; stating the mission with respect to educational values, aims and policy; making technical support available; possibly deciding on the general level of support and training to make available to academics, and so on.

Operational and curricular management (OM): those in charge of gathering and organising the necessary resources and implementing strategy, within the constraints of the institutional context and budget. They manage the programmes by deciding on the types of course to be delivered by the academics, structuring the programmes and deciding on the sequence of courses.

Teaching and learner management (TLM): those who are responsible for carrying out at a practical level the actions required by the strategy. They develop and deliver courses, identify learning resources and organise them, and manage the learning activities of the students. This level also includes those involved in supporting roles in technical areas, administration and information management.

As you can see from our descriptions, this hierarchy of actors has to deal with increasingly detailed contexts within which to operate as we move towards the teaching level. The successful implementation and 'mainstreaming' of new approaches such as learning objects would require these different institutional levels to be in alignment and work as a coherent whole [15], [1], [6]. Thus, the organisational model might also usefully fulfil an analytical and diagnostic role for those tasked with implementing e-learning in an institution – opening up the intriguing possibility of representing the dysfunctional aspects of an institution in relation to the chosen aspects of e-learning.

These different levels in an institution tend to have, naturally, different contexts or 'filters' on the process of adopting new systems, as follows:

IM will be looking for the 'big picture' items like retention and progression figures, exam grades, costs, market share, educational profile, long-term planning.

OM will tend to see it as the delivery of 'product' and relate it to departmental budgets and targets, quality control, the type and costs of learning materials and, crucially, the task of introducing new working practices.

TLM is concerned with mechanisms for delivery (face to face or on-line), the balance between guidance/facilitation roles and instructions, assessment procedures and the type of learning resources.

3.2 Four different perspectives

In addition to these three institutional levels, van der Klink and Jochems [6] propose that at each level it is possible to see the problem space from four different perspectives (giving us, potentially, a family of analysis and evaluation tools – which we shall turn to later).

A technological view: the use of technology in such a way that it can support the actors at different levels to carry out their functions and achieve their targets. Until now, the premise has been that supplying staff and students with an adequate infrastructure is enough to improve educational programmes – this has not been upheld. Technical aspects have been focused on without understanding how this would support pedagogy or strategic goals, or taking into account the organisational context.

A strategic view: the organisational strategy and business processes that have to occur to support the change, and how embedded they can become in the organisation. E-learning cannot be regarded as an isolated issue; it is expensive and impacts on a large number of institutional processes, and good reasons are needed for its implementation. Awareness of what might realistically be delivered is needed, and clear goals are required in relation to internal strengths and weaknesses and external threats and opportunities.

A pedagogical view: this is required to determine the sensible use of the technology. A considerable number of questions need to be answered, ranging from the extremely practical to the more philosophical. Van der Klink and Jochems [6] recommend that it is very useful to start with rethinking views of learning, instruction and teaching to encourage staff to think beyond their current frameworks. Interestingly, Goodyear et al [3] recommend this approach as well and produce a very useful discussion of it, which we would recommend highly, and it has also been adopted by USQ in Australia [5].

An organisational view: this includes the ability to identify and evaluate the interplay between personal, departmental, cultural and professional viewpoints played out within an institutional context. The introduction of e-learning will either be an innovation (usually a bottom-up and non-sustainable activity, which accounts for much of the present scene) or a transformational change that requires top-down involvement and will affect all aspects of the organisation. In the first scenario little will change – although tensions will increase, but be unresolved. In the second scenario the roles, responsibilities and relations of the departments and individuals in the organisation will be strongly impacted upon and change.

4 A graphical representation of the model

The diagram below in Figure 1 illustrates the model, with the three hierarchical levels combined with the four different perspectives to provide an integrated whole. The fact that the three levels of institutional organisation are in alignment indicates that they are working well and coherently to deliver e-learning opportunities – the vertical lines indicate channels of communication around certain perspectives or views. Where the vertical lines intersect at the corners of the squares represents those activities and

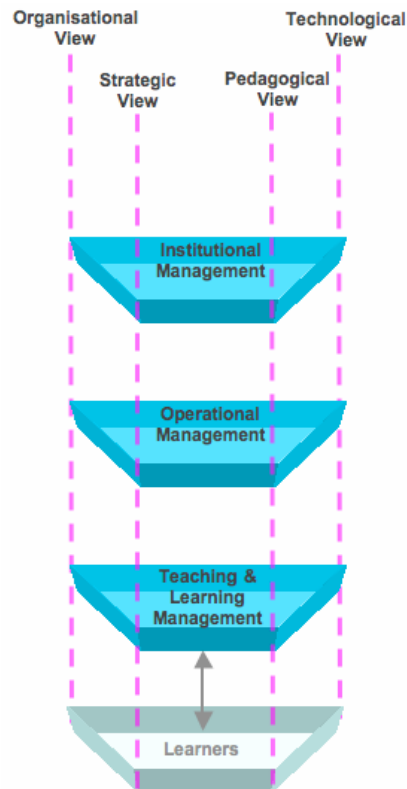
perspectives at each institutional level. The significance of each of the perspectives will naturally vary across the different levels of any institution.

5 Deriving analysis and audit tools from the model

The model can be used to produce a series of grids, matrices and other representations that enable us to record succinctly and in an easily shareable manner the different aspects of the institutions we want to describe and analyse. We can start with a three- column by four-row grid as shown in Figure 2 and use that to derive a set of tools. We have used these tools to help to analyse and evaluate a number of different organisational factors relating to implementing a DRM system. The current set of tools with their working content can be found at this web address: http://www.uhi.ac.uk/lis/projects/trustdr/work_in_progress.html under the heading of 'WP SP2 Organisational Modelling Framework – Analytical and Evaluation Tools'.

Figure 1: The organisational model

Figure 2: Basic analysis and audit tool derived from the model



Level \ View	Teaching & Learner Management	Operational & Curricular Management	Institutional Management
Pedagogical			
Technological			
Organisational			
Strategic			

6 Evaluation of the model

So far, the use of this model and the derived tools has indeed proved useful in facilitating 'round table' discussions among the project team, who work in the separate domains of learning technology, information management and systems development. We intend to test the functionality of the model further by using the tools with project partners and recording the results. We shall be including the model and tools in the project outputs as part of a DRM system developer's kit to facilitate analysis and communication activities.

7 Future developments

The advice 'keep it simple' springs to mind. One obvious application is that once an analysis is completed and decisions taken or a strategy formulated, then the model can provide ways of disseminating what is required at each level from the various perspectives. The same documents may also provide a useful evaluation or audit tool.

From a planning and evaluation perspective, the model can also help in determining the 'return on investment' in relation to e-learning as discussed by Collis and Moonen [1]. In this respect it would also help to identify the likely winners and losers arising from the proposed changes involved in implementing e-learning. This aspect of e-learning, its 'political economy', is an increasingly important one and being able to represent it is a very useful function.

Another possibility is to act as a support tool to gather and collate information to feed into more dynamic organisational modelling and planning activities. This might include visualisation tools that help institutional management to understand the possible effects of their decisions.

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