CAMEL Tangible Benefits of E-Learning Project
Final Report

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Association for Learning Technology

The Higher Education Academy

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Executive Summary

Aims and Objectives

The CAMEL Tangible Benefits of e-Learning project aimed to collate and share the tangible and real benefits to staff, learners and institutions of e-learning, through a discipline and academic department focus by using the CAMEL model devised by JISC infoNet and ALT (see Background). Its objectives were to produce: up to 16 institutional case studies, with a subject discipline focus, which identify tangible benefits of e-learning; and report on the CAMEL workshops and evaluation of the process, which aimed to identify any real or perceived weaknesses or threats of e-learning..

Approach

The approach taken was to: agree a template for the case studies and set up a wiki so that participants could collaborate online; hold a series of 24-hour workshops during which participants would question, challenge and reflect on each others' practice; continue the exchanges online to finalise the case studies; and synthesise the outcomes for JISC and the wider community.

Outputs

The final outputs are 37 case studies from 16 institutions, so the project has exceeded its original case study target. The case studies are currently available for viewing on a password-protected wiki. The case studies incorporate a rich selection of media including graphics, video and simulation games. Appendix 1 of the report contains summaries of all of the case studies in the form of a 'cover sheet' that outlines the piece of work undertaken and indicates what types of tangible benefits are shown in the study under a list of headings agreed by the project participants, including: effect on learning (e.g. context, style, insight and reflective practice); effect on exam results; effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning); and others.

Findings and Conclusions

Participants commented that the project had altered their perception of the tangible benefits of e-learning and made them consider both the quantitative and qualitative aspects as well as the varying perspectives on benefits according to different stakeholder viewpoints. Whilst the project participants gained most value from the process of critical reflection itself, they also valued the end products, i.e. the actual case studies. Participants identified the cross-disciplinary interaction as one of the most useful elements of the project.

Participants have indicated they will make use of the case studies in future. Participants also endorsed the CAMEL model as one that fits well with the academic culture and people felt they learned more from this type of critiquing and informal networking than from many formal staff development activities. However, there was a general feeling that the timescales were too tight to gain the full potential value from the CAMEL exchange approach.

The subject areas sampled are believed to be representative of their discipline and thus represent the subjects studied by 42% of the HE student body in 2005/06 (Source HESA 2006). The report makes a few tentative observations, such as:

- Savings in staff time as a result of implementing e-assessment in medicine could probably be replicated across both the Health and BMAF/Economics subject areas (although there is less evidence of immediate applicability in Humanities).
- Those who have provided figures for student achievement appear to be recording improvements of around 10% in pass rates as a result of the e-learning they have implemented.

The most fundamental point to come out of all of the case studies is that the appropriate use of technology is leading to significant improvements in learning and teaching across the sector and that this is translating into improved satisfaction, retention and achievement. E-Learning is facilitating the expansion of the sector without necessitating corresponding increases in the footprint of the physical estate and it is allowing broadly the same numbers of staff to educate a larger and more diverse student body. The kind of high quality, diverse, accessible, expanding higher education system desired by government and funders is no longer possible without e-learning. Continued investment and innovation in the field of e-learning is essential if the UK is to remain a world leader in education.

1. Background

The JISC Learning and Teaching Committee (JLT) has been aware of the need to provide more evidence for the benefits of e-learning to the education sector. As more investment has been made in this area both by Government and institutions in recent years, the need for this evidence has grown, as have the requests from Government departments for this evidence. Notwithstanding the oft-cited difficulties of comparing different implementations of e-learning approaches and the apparent intangibility of some benefits attained, it has been clear that a case study approach could shed more light on this crucial area. With this in mind, JLT commissioned JISC infoNet and the Association for Learning Technology (ALT), through the JISC Communications Co-ordination Group, to undertake a project that would draw out lessons from different e-learning approaches across a wide range of disciplines. At an early stage, it was agreed that a tripartite arrangement with the Higher Education Academy (the Academy) would benefit the project and JISC CETIS was invited to be part of the Steering Group.

The project approach builds on a previous project funded under the Higher Education Council for England (HEFCE) Leadership, Governance and Management Programme entitled CAMEL (Collaborative Approaches to the Management of e-Learning) http://www.jiscinfonet.ac.uk/camel as explained in the section on 'methodology'. As in the previous project we have attempted to draw out lessons about what hasn't worked as well as intended along with the successes.

The project is, we believe, unique to date as this is the first time any national bodies have looked at e-learning through the lens of subject disciplines and it represents a new form of engagement between the JISC and the Academy. The resulting snapshot spans eight different subject disciplines across sixteen old and new universities in three of the home nations.

2. Aims and Objectives

Aim

To collate and share the tangible and real benefits to staff, learners and institutions of e-learning, through a discipline and academic department focus by using the CAMEL model devised by JISC infoNet and ALT.

Objectives (Outputs)

To produce

- up to 16 institutional case studies, with a subject discipline focus identifying tangible benefits of e-learning
- a report on the CAMEL workshops and evaluation of the process, which will aim to identify any real or perceived weaknesses or threats of e-learning

3. Project Approach

The original request from JLT for a set of case studies presupposed that one or more consultants would be appointed to interview people in a range of universities and write up the case studies. It was felt by JISC infoNet and the JISC Programme Manager that more value might be derived for the sector by facilitating a set of inter-institutional exchanges whereby participants studied one another's practice and worked collaboratively (both face-to-face and online) to question, challenge and reflect on the practice with the outputs being a set of peer-reviewed case studies and, of course, knowledge transfer between the institutions.

The CAMEL model appeared to be an ideal approach to facilitate this type of collaborative activity but the strict time constraints of the project meant we were unable to apply the model in its entirety so had to come up with a variant that would be achievable during the timescale (April-July 2007). These constraints were noted at the start of the project and recorded as follows in the project proposal document:

- From the experience of ALT and JISC infoNet in running the first CAMEL project it is clear that the participants generally need longer to develop a good working relationship than is normally possible with short-term projects of this kind. The very tight timescale of this

project and the need to produce outputs quickly means that there will not be time to 'experiment' with the model.

- In order to meet JISC's needs it will be necessary to focus on general e-learning topics that can be demonstrated to be of use both across departmental subject boundaries and across institutions. Through a discipline approach the aim is to draw out general issues related to e-learning wherever appropriate and to identify issues for academic departments, i.e. issues of strategic relevance to institutions and academic departments. It is important that the issues are not limited to particular subject areas, or merely instances of individual practitioners trying something with small groups of learners. It was decided to also relate the work undertaken to the Activity Areas identified by the JISC e-Learning Programme[1]: e-assessment; e-portfolios; learning resources and activities; technology-enhanced learning environments; and e-administration for learning and teaching (although this last area was not included in this project).

As time for this project was so short, and there was a lot of support from the JISC Programme Manager to apply the CAMEL exchange model, we did not evaluate other methods to deliver the outcomes beyond considering a CAMEL-type approach versus relying exclusively on external commercial consultancy.

The role of specialist consultants to the project was taken on by the Academy as it was felt that a subject discipline focus would lend an interesting dimension to the project and that the use of existing subject centre networks would get round some of the issues of forming an effective and coherent community within such a short timescale. The original plan was to create 16 case studies following a set of four themed workshops. Rather than issue an open call, as in the previous CAMEL project, participants were recruited directly by the Academy subject centres.

The outline approach was as follows:

- Agree a template for the case studies to cover the key areas of interest and set up a wiki so that participants could showcase their practice online and begin drafting their case studies and reviewing other people's work
- Hold a series of four 24 hour workshops during which participants would question, challenge and reflect on each others' practice
- Continue the exchanges online with participants working collaboratively to finalise the case studies (with particular emphasis on inter-disciplinary working)
- The Academy consultants and other Steering Group members to synthesise the outcomes for JISC and the wider community

The very short timescale was exacerbated by delays in recruiting partners which made it difficult to run exchange workshops at different times as had been envisaged. For this reason a large event was planned to which all project partners were invited thus enabling institutions to share more widely across disciplines. This took place on 5th/6th July in York (although late in the day it became evident that not all participants could attend so a separate workshop was held in Bristol). The final workshop discussed the examples of tangible benefits of e-learning provided by each institutional partner in the form of case studies, using a discipline focus and a thematic focus. The institutions shared and discussed these examples in groups and edited their case studies in response to recommendations from the workshop.

Although the CAMEL model was not used in its fullest sense – i.e. a series of exchange meetings attended by all participants over a long period of time – we felt that real sharing did take place both in person at the workshops and online.

4. Implementation

4.1. Governance and Management

- JISC infoNet assumed overall responsibility for governance of the project

[1] http://www.elearning.ac.uk/subjects/AAoverview

- ALT undertook the day-to-day management of project activities and workshop organisation, and evaluation of the process
- The Academy appointed consultants and recruited institutions through the Subject Centre network

A Steering Group was established including:

- JISC infoNet representation – Gill Ferrell and Jacquie Kelly
- ALT representation – Rhonda Riachi
- JISC e-learning programme manager - Paul Bailey (later Sarah Knight)
- The Academy – Lawrence Hamburg, David Sadler
- JISC CETIS – Sarah Holyfield

4.2. Activities and Participants

The Subject Centres were invited to identify suitable institutions, and 16 institutions were subsequently invited by the Academy to participate in the workshops. The workshop aims were to discuss and share examples of tangible benefits and the real value of e-learning within their institutions. The workshops were themed to align with key priorities of the JISC e-Learning Programme (see section 3). The institutions were supported via a group wiki to write case studies of these benefits before the workshop and to edit them after the workshop.

The Academy recommended three Subject Centre staff to act as consultants for the project, who in turn liaised with other subject centres to recruit the 16 institutions to the project using their email lists and through their contacts. The call went out later than planned (around the Easter break) so the confirmation of partners took longer than expected and required a lot of chasing, which unfortunately coincided with the start of the new academic term. All partners were required to sign and return the Project Initiation Document (PID).

The Steering Group met by phone conference in the set-up phase and a meeting with the three Subject Centre Consultants was convened on 10 May to agree the scope and methodology of the project.

A project start-up meeting was held in Birmingham on 17 May, to which all interested Subject Centre staff and representatives of institutional partners were invited. This date had been chosen on the advice of the Academy, as they were meeting at the same venue that day. In practice, it was difficult for Subject Centre staff to attend both meetings, so some staff could not participate in the start-up meeting. Likewise few university partners were able to attend as many had not confirmed their participation at that stage.

4.3. Online Collaboration

To aid sharing of materials a wiki was set up for all partners to use (on PBwiki). The wiki contained all project documents, links to all members, and the case studies, which were gradually developed by the institutions with the support of the project team. Partners used the wiki in different ways:

- Individuals developed case studies offline in Word, circulated to their group, and posted the final draft onto the wiki
- Groups collaboratively developed case studies offline in Word and posted final drafts
- Individuals produced initial case studies in the wiki and group members then edited as and when
- Groups worked collaboratively online directly on the wiki to produced near-final drafts

We found that the wiki generally worked well, as:

- it enabled separation of case studies into themes
- editing by all partners was easy
- the ability to include images enhanced the usability of the case studies

- the notification facility was useful for individual teams and management of the project
- it provided a back-up facility to download items as a zip file
- it provided a central storage area for reference documents, list of partners and email addresses
- we could use comment boxes to give individual feedback

Problems we encountered included:

- the print facility was of limited use
- access was slow for some participants which made 'live' editing online difficult

It was interesting that overall there was not so much collaborative writing as had been expected. There appeared to be reluctance on the part of participants to share material until they felt it was in a final, polished form. In other words, they approached this as if they were writing for publication. Authors did not invite comment on aspects of their draft case studies or ask others opinions on particular questions. Despite this, many participants found that one of the most valuable aspects of the workshops was the time spent critiquing one another's case studies. However, even after the workshops, when there was general agreement about the value of such critiquing, very few participants actually posted comments or questions about the material on the wiki. Some of this may be down to the short timescales of the project but it is clear that this type of collaboration represented a considerable departure from the norm for most of the participants.

The fact that the group members were prepared to question and challenge one another in a face-to-face environment yet were more reticent about doing so in an online community has obvious implications for their roles in fostering online communities amongst their students, and indeed one of the recommendations of this report is that academic staff need greater exposure to social and collaborative technologies in order to become more comfortable with them and to understand their potential for teaching and learning.

Although we originally indicated that we were more interested in medium to large-scale initiatives, we did ultimately involve a number of examples of individual practitioners working with single cohorts of students and this did produce some interesting outcomes. Taken together, the studies also amounted to more than the sum of their component parts. For example, a series of relatively small-scale case studies from a very traditional institution in disciplines not noted for their innovative use of technology represents a major transformational shift for the institution overall.

Workshops were fewer than originally intended. This was owing to the short timescale for the project and the timing (the project overlapped with examination marking, examination board meetings, Subject Centre conferences and the Academy Annual Conference). Two workshops were held: a short one in Bristol for those members of the BMAF and Finance cluster who could not attend the York workshop, and one in York which involved an overnight stay with dinner together, attended by 40 people.

4.4. Workshops

Bristol Workshop

The Bristol Workshop, hosted by the Economics Subject Centre, was held to allow contributors who could not attend the York Workshop to discuss their case studies. Staff from the Economics Subject Centre also provided advice and guidance and the group identified a number of themes, which were brought to the York Workshop, for discussion the following day.

York Workshop

Five case study presentations were given on 5 July in a showcase format, based on the draft case studies that had been entered on the wiki by each institutional partner, which prompted some initial discussion of key themes. They were:

- e-Assessment – Simon Wilkinson, Nottingham
- Technology-enhanced learning environments – Deirdre Burke, Wolverhampton
- e-Portfolios – Julie Hughes, Wolverhampton

- Learning resources and activities – Carolyn Gibbon, Central Lancashire and Chris Hall, Swansea

Participants then spent time getting to know one another over dinner and any remaining ice was broken by an exercise in making a camel using Origami paper.

Day 2 (6 July) started with an open discussion on 'who are the stakeholders for this project?' and 'what types of evidence of tangible benefits can we cite?' This was followed by group discussions, first by subject cluster and secondly by theme. One of the activities undertaken during these sessions was the critiquing of one another's case studies.

- Notes from the discussions were posted directly into the wiki which enabled sharing between groups and updating by all
- Another outcome of the session was the development of a 'cover sheet' for each case study to highlight the tangible benefits against an agreed set of impact indicators

4.5. Post-workshop Activity

All institutional partners were given one week to update their case studies based upon group discussions and other feedback. The consultants then mapped tangible benefits identified in the case studies onto the areas given in the case study template. The consultants and JISC infoNet (with ALT participating by phone) attended a one-day meeting to work on the format of the final report.

4.6. Issues and Lessons Learned

The project has only just completed and has yet to hold a full post-project review although some issues can already be noted:

- It is clear that the project suffered from a range of communication issues especially in the early stages. The role of the Academy in recruiting Subject Centres and then the Subject Centres in recruiting institutions meant that the Project Manager and core team were initially working at third remove and did not have a full list of project participants until late in the day so participants were not getting a clear set of messages from a central source
- Although key deadlines were set in March prior to the recruitment of participants and were intended to be non-negotiable (i.e. the project only felt able to recruit partners who could commit to the tight deadlines) there was a considerable amount of renegotiation and then slippage on agreed deadlines
- Over-recruitment of participants against the original targets led to both logistical and resource issues, in terms of preparing over twice as many case studies as expected, and to budgetary issues which had to be resolved
- Although a more flexible timescale may have alleviated some of the issues, it is the view of the Project Director that many of them were an inevitable consequence of organisations with very different cultures and approaches to project management working together for the first time in this way and that with a different timescale it may simply have taken us longer to arrive at the same set of issues. These and other matters will be explored in the post-project review with a view to producing recommendations for future projects

4.7. Research Methodology

In approaching the case studies, the project team relied upon, in the words of Oliver and Conole (2003), an '*eclectic research paradigm*', one in which '…*different viewpoints can be raised, and in which the beliefs and interests of practitioners are valued alongside those of funders and policy-makers*'.

The case study template was deliberately designed to allow practitioners ample space for narrative, and thus permitted the collection of substantial amounts of qualitative evidence which serve to put 'finer grain' onto the quantitative data. It was underpinned by a socio-economic technical approach

to understanding how technology becomes implemented and embedded within an organisation.[2] This informed the sequence of questions which enabled the narrative to develop.

Additionally, it was felt to be vital that practitioners were allowed to report upon the failures as well as the successes of their approaches in order, not only to construct a properly representative picture, but also to encourage reflection and potentially allow others to learn from these failures.

The Subject Centre consultants were also eager to discern the relationship between academics' pedagogical and epistemological disciplinary 'beliefs' and their professional teaching 'practices'. The complexity and variety of these relationships has become apparent during the analysis phase, and has confirmed that motives and curriculum decisions regarding technology in learning are complex and driven by a number of factors.

In terms of the types of evidence provided by the case study authors, exam results, internal and external evaluations, student feedback and focus groups, system logs, departmental budgets and anecdotal evidence from both students and staff were the most commonly cited. No particular weighting was given to the types of evidence during analysis, as we felt that, given the use of an eclectic research paradigm, all these types of evidence could be considered valid and illustrative of the impact of e-learning within the learner groups, departments and institutions described. To have privileged, for example, more easily quantifiable departmental budgets and exam results over anecdotal evidence from tutors and students would have been potentially to oversimplify a very complex picture and produce misleading analysis. A 'mixed' methodology, employing both quantitative and qualitative elements, can be very successful in capturing the type of complexity and diversity seen within the sector.

One potential drawback with the use of a case study template containing significant prompts for narrative can be summed up as the difficulty of these case studies being '*shaped by the meanings of those who are the participants in the situation*.' This thorny issue of the authorial voice is well-illustrated by the variation in register of language within the case studies. The honesty (and occasionally self-deprecation) of the authors is however heartening and adds to the validity and credibility of the case studies as 'tales from the chalk-face'. This effect was countered to some extent by the critiquing of material by other participants and one of the important outcomes of the workshops was the recognition by many participants of previously unrecognised benefits and consideration of stakeholder views very different from their own.

Another level of analysis – and therefore of objective distance – from the case studies was also added through the inclusion of cover sheets which used a set of criteria differing from those set out in the case study template, and which have been compiled or reviewed by the consultants.

5. Outputs and Results

The outputs of the project are a set of 37 case studies of the tangible benefits of e-learning identified by subject discipline and by JISC e-Learning Programme activity areas.

The case studies are currently available for viewing on a password-protected wiki. The case studies incorporate a rich selection of media including graphics, video and simulation games which would be lost should we endeavour to disseminate them by paper means. Dissemination of the case studies would be greatly assisted by making them available in a searchable web format and the intention is to bid for further funds in order to achieve this.

Appendix 1 contains summaries of all of the case studies in the form of a 'cover sheet' that outlines the piece of work undertaken and indicates what types of tangible benefits are evidenced in the study under the following headings:

- Effect on learning (e.g. context, style, insight and reflective practice)
- Effect on exam results
- Effect on student personal development (e.g. skills, employability, confidence)
- Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)
- Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

[2] Holyfield and Liber. 2003. http://www.jiscinfonet.ac.uk/InfoKits/creating-an-mle/introduction/why-have-we-done-it-this-way

- Influence on educational research
- Staff satisfaction with e-learning
- Effect on staff personal development (e.g. skills, employability, confidence)
- Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)
- Influence on retention (e.g. students or staff)
- Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)
- Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)
- Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)
- Effect on management of learning assets (e.g. institutional IP, repositories)
- Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

Many participants also commented that the project had altered their perception of the tangible benefits of e-learning and made them consider both the quantitative and qualitative aspects as well as the varying perspectives on benefits according to different stakeholder viewpoints. One participant noted that '*some are easier to quantify than others but mostly there is more evidence than I thought*' while another said it had given them a much greater understanding of how to measure such things noting that '*previously it has been a bit of a pie in the sky*.' In some cases there were tangible benefits that had not occurred to the tutors involved until they had gone through the process of analysing the benefits with 'critical friends'.

Whilst the project participants gained most value from the process of critical reflection itself they also valued the end products i.e. the actual case studies. Feedback from institutional participants and the Academy subject centres indicates that they greatly value having a set of case studies that provide a range of subject discipline examples as well as being able to take ideas from cross-disciplinary examples. Many participants identified the cross-disciplinary interaction as one of the most useful elements of the project.

We are encouraged by the extent to which participants have indicated they will make use of the case studies in future. Some are looking to them for inspiration in their own work: '*It has motivated me to think of new ways to engage and interact with my students*' whereas others intend to use them for staff development purpose and to 'convert' others - as one participant said, '*There is so much here that others can use*.'

Finally, it is also encouraging that participants endorsed the CAMEL model as one that fits extremely well with the academic culture and people felt they learned more from this type of critiquing and informal networking than from many formal staff development activities. One participant who was enthusiastic about the approach said '*We have been allowed to destabilise knowledge construction in this project*.' It was noted that the type of critiquing carried out during the project is not something people naturally do within their own institutions. A number of participants felt that they have to 'sell' their work to their institutional peers whereas it is easier to discuss the issues with externals (similar feedback has been obtained from other projects using the CAMEL model). The comment that '*free food is important'* was not made lightly and supports the more in-depth evidence from earlier CAMEL projects that social interaction is a pre-requisite for the development of the trust needed to facilitate critical analysis of one another's work and openness about issues. There was a general feeling that the timescales were too tight to gain the full potential value from such an approach (see recommendations) but otherwise there is little that participants would wish to see done differently. '*I'm not sure there is a clear way to improve it. The support was easily available and enthusiastically volunteered. The process is transparent, or as good as*.'

(See Appendix 2 for a breakdown of the results.)

6. Outcomes

The goals and objectives set out in the project PID are listed below with a note on the extent to which each was achieved.

Goals	Objectives	Achievements
To use the a variant of the CAMEL exchange method amongst managers, lecturers and learning technology practitioners to assess evidence of tangible benefits of e-learning across a range of institutions and subject disciplines	To facilitate workshops in order to share practice and issues	3 workshops/meetings held: Start-up meeting, Bristol and York
	To foster an open, trusting relationship between institutions	Chatham House Rule applied
		Non-judgmental approach
		Case study and report development was open to all
	To use readily available technology to facilitate a sharing culture	Project wiki set up and used for development and sharing of case studies
		JISC mail lists used for communication
	To identify tangible benefits that could be applicable across a range of contexts and subject disciplines	8 Academy Subject Centres involved together with 16 university partners
		37 case studies developed across a range of disciplines
		Case studies organised into JISC e-learning programme activity areas
		Case studies mapped against a range of tangible benefits
		See Appendix 1 for case study summaries
		See below for discussion on findings that arose from the case studies
	To show how developments at subject level support the institutional strategy	Consideration of each case study (explicit question)
	To identify tangible benefits that will inform the development of future strategy and policy	A range of tangible benefits, together with metrics, across a range of subject disciplines and cross-cutting themes have been identified. See below

	To complement the work of the institutional Benchmarking and Pathfinder Projects	Disciplinary view to complement the institutional view of these projects. N.B. Some of the Pathfinders are also using the CAMEL model
To disseminate good practice in the development of e-learning	To produce case studies to inform the wider community about the benefits of e-learning identified	37 case studies produced. See Appendix 1
	To address topics of interest to the sector and of relevance to the JISC strategy	JISC e-learning activity areas used
		Metrics used
	To present papers to a range of national conferences	Future work: ALT-C 2008, The Academy Conference 2008, Subject Centre conferences 2007/8, and possibly UCISA 2008 and EUNIS 2008
	Participants gain value from the visits	Case studies were amended following feedback from the workshops
		Positive feedback from final evaluation of project
	Participants take action/change practice as a result of the project	Statements from final evaluation of project
To develop a Community of Practice with an awareness of the CAMEL methodology that exists beyond the life of the project	Participants gain lasting value from the links made as a result of the project	This will require a follow-up evaluation possibly through the Subject Centres but initial signs are positive
	The CAMEL model used for this project is made available to help others organise similar initiatives	The CAMEL Model is available at http://www.jiscinfonet.ac.uk/camel
	CAMEL is used as a model by other Communities of Practice	Some participants have expressed interest in doing this within their own institutions. Some Pathfinder projects using model
	The project strengthens the JISC/Academy partnership and enhances appreciation of a subject-based approach within the JISC	Outcomes delivered using a new approach. Overall success will depend on availability of funding for effective dissemination

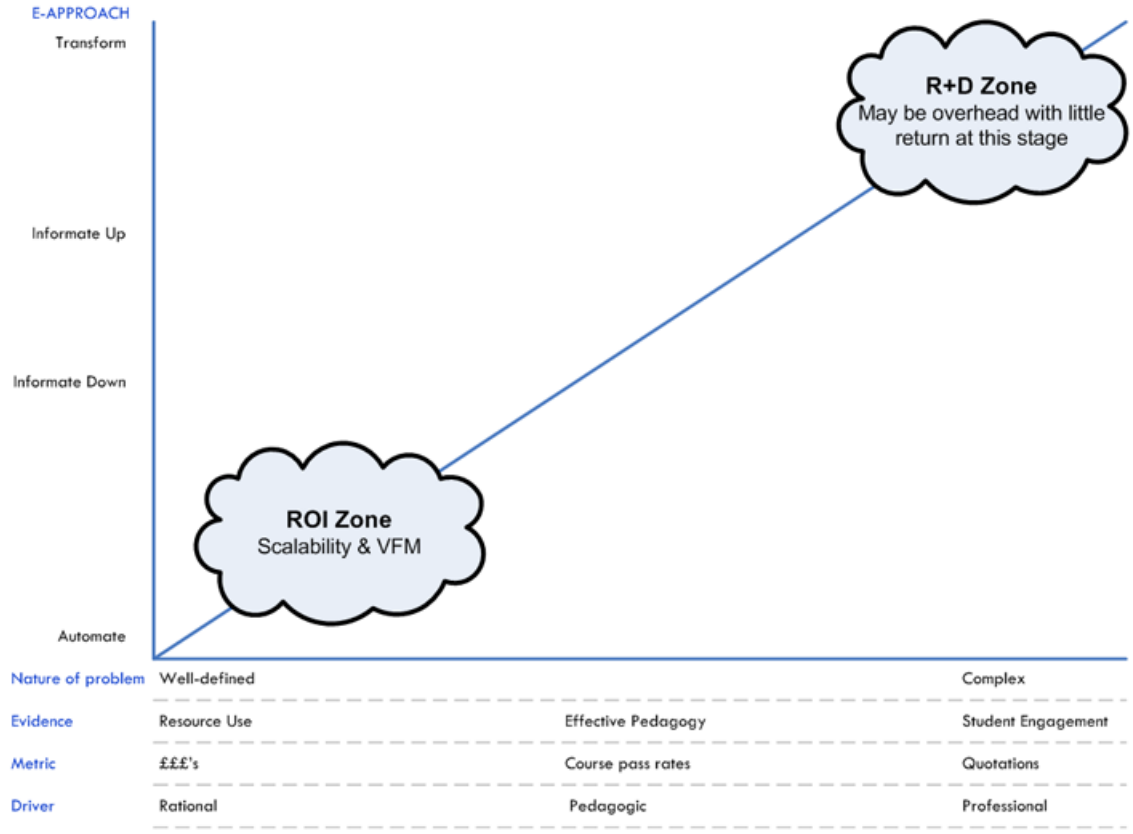
6.1. The e-Learning Spectrum

The project has certainly met its operational objectives and, despite delays in the early stages, the range of project outputs has far exceeded expectations. What is more important, however, is what we can extrapolate from this about the state and value of e-learning in the sector as a whole.

The research question itself, i.e. to provide some evidence of the tangible benefits of e-learning, could be described as too vague and ill-defined to be likely to produce the desired results. The very open-endedness of the question did however seem to lend itself to a particular approach that has resulted in a surprising diversity of data and has produced overall a much richer picture of activity in the sector than might be anticipated from such a short-term project.

The picture we have, whilst not derived from an entirely random selection of vignettes since there are particular disciplinary threads, is very much a snapshot of what is going on in the HE sector at the present time. In attempting to make sense of the diversity of the case studies we devised a graphic representation that we believe holds true for tangible benefits in the sector as a whole.

Figure 1. Benefits of e-Learning: Drivers, Approaches and Metrics



X Axis – Nature of issue

The x axis of the graph in Figure 1 shows the type of tangible benefit demonstrated and the sort of metrics that can be used to evaluate such benefits. What maps equally well onto that axis is the type of problem the institution is trying to solve and the rationale for doing so. What we find here is that a well-defined problem such as how to assess large cohorts of students within a tight time-frame can be measured against a very specific and readily quantifiable set of metrics and that it is relatively easy to put accurate figures on time and cost savings. The rationale for undertaking this kind of change is entirely rational and to some extent self-evident.

Towards the middle of the scale we find activities where the intended benefit is to improve learners' understanding of a particular subject – in other words a pedagogically-driven change where the tangible benefits can be measured in terms of course or module pass rates or other direct measures of achievement.

At the far end of the scale, we encounter approaches intended to address far 'softer' and more complex issues of student engagement. The rationale behind such activities is often no more than

the vocational commitment of the academic concerned in the first instance (call it professionalism or, as one participant put it, '*Lots of the time you do it on a hunch'*) and evidence of success may be entirely anecdotal for some time.

Y Axis – e-Approach

The y axis shows how the 'e-approaches' differ in nature from those that seek to automate existing practices through those that add increased value by the application of information to those that ultimately seek to transform the learning process.

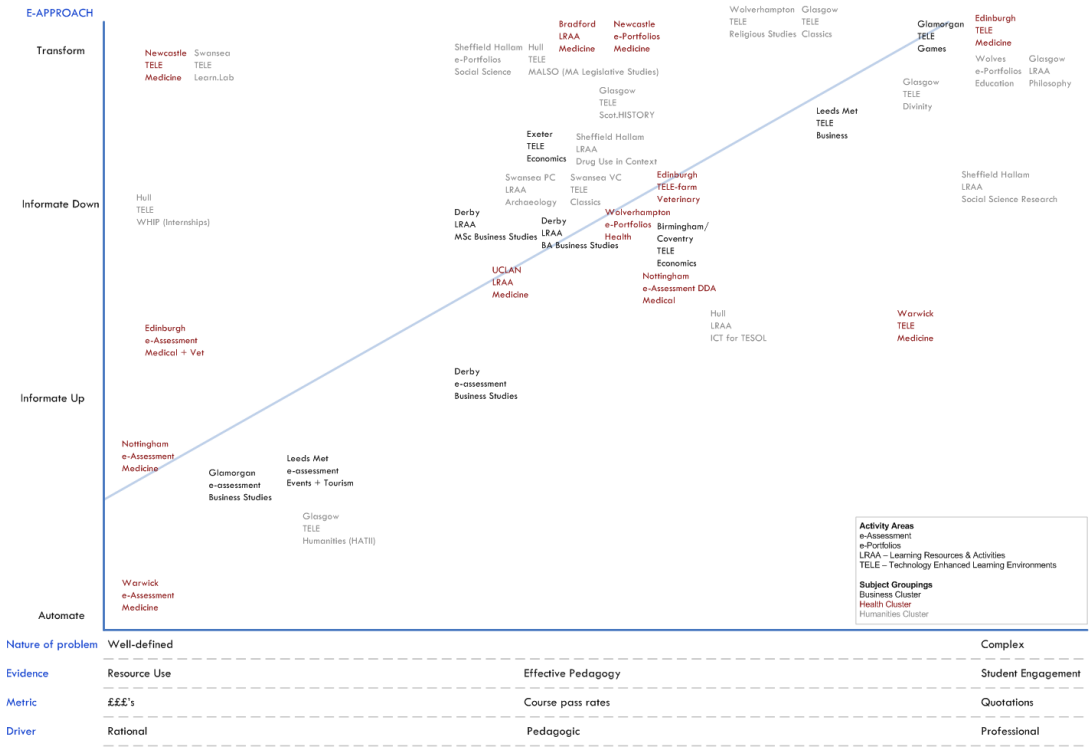
The term 'informate' is taken from Zuboff (1988) who describes the change from the early days of 'computerisation' aimed at process-automation to the late 80s where the provision and analysis of the information, made available from earlier computerisation, begins to have a transformative effect on the management, strategy and structure of organisations. Schein (1989) makes the further distinction between 'informating down' whereby control type information is passed downwards and 'informating up' whereby those closest to the issues pass information up the chain (in our case upwards from the student to the lecturer).

It can thus be seen that the approaches clustered in the bottom left quadrant are those that represent the clearest return on investment (ROI) and it is easily possible to assess their scalability and the value for money represented by further investment. Those in the top right quadrant however are more research and development (R&D) in nature and in their present form may represent overheads without any immediately obvious return. This is the kind of risk-taking that is necessary to keep the sector moving forward and we can anticipate that these activities will move down towards the bottom left as they become more established.

It is important to note that we need a balance of activities in all of these quadrants if we are to see real progress. For example, we may already be able to assess students quickly and cheaply using technology but if we assess them and find they are failing we need projects further up the R&D scale in order to address that.

6.2. The Disciplinary Snapshot

Figure 2. Mapping of Case Studies to e-Learning Benefits Model (See Appendix 3 for larger scale figure)



It is interesting that, although many of the case studies are based on work that is hosted or built upon an institutional VLE, there are no case studies that describe the technical development or implementation of the VLE (or other tools). This gives us confidence that the project attracted the desired participants i.e. learning and teaching practitioners rather than technical developers. It was also noticeable the extent to which some participants simply viewed their institutional VLE as a tool provided to help them do their job and were happy to get on with using the tools provided whereas others were more inclined to question whether the right tools were being provided.

The above is perhaps illustrative of the differences between the various subject disciplines in terms of technological and pedagogical innovation. What appears well embedded in one subject area may be quite innovative in another, for instance the e-mentoring work in the Philosophical and Religious Studies cluster is quite radical within that discipline. To some extent this simply reflects the extent to which practitioners in some disciplines have needed to engage with technology as a routine part of day-to-day life for some time whereas other areas have not needed to engage to the same extent and rely on a few 'champions' to spread new ideas. On another level, there are some quite deep-rooted cultural issues to be addressed.

There is a feeling that, generally, in many cases staff in the Humanities have actively resisted the use of institutional VLEs but are now beginning to engage with certain types of 'social software'. One participant described it as '*the difference between e-learning as a factory or a city'*. Humanities wants the e-learning city i.e. to be able to wander at will and choose which shop to go into rather than be part of a prescriptive process. This has particular implications for the future of e-learning as we are reaching a point where many of the barriers previously preventing participation by this group are being removed. The issues that arose with the use of monolithic VLEs may not exist in the web 2.0 era and beyond. The learning curve in terms of IT skills required at 'entry level' is much shallower and the tools themselves can support a much greater variety of pedagogic approaches.

It is also interesting that the project participants did not feel the need to get bogged down in any kind of debate about what does and doesn't constitute e-learning and this is perhaps indicative of the fact that the sector as a whole is starting to move beyond its initial fixation with the technology to concentrate more on how it supports learning. However one might define e-learning, it is very evident that the appropriate use of technology is having a significant impact in terms of improving the quality of UK education. This snapshot of e-learning looks very different to how it might have looked five years ago when much effort was concentrated on creating e-content instead of content on paper. All of the case studies exhibit a broadly socio-constructivist approach.

6.3. Examples of Tangible Benefits

The tangible benefits identified in the case studies are wide ranging; from direct, easily measured benefits to students (for example enabling swift feedback on assessment) to those that are sometimes difficult to measure with longer term payback (for example, external recognition for students, staff and the university). The following section highlights key areas where we identified tangible benefits from the appropriate application of technology and gives a few examples of the benefits cited:

- **Cost Savings/Resource Efficiency**

Probably the most readily quantifiable cost savings were identified in the area of e-assessment where automated marking of exams for large cohorts of students now takes seconds rather than hours.

Leeds Metropolitan University has implemented e-assessment on its Applied Technology and Finance programme and marks for a cohort of 350 students are available within three hours of the completion of the exam whereas in previous years the process could easily take 120 hours of staff time (equating to a cost of up to £3K per cohort). This degree of savings in cost and time is apparent after three years although it is now recognised that increased use of reusable learning objects and question banks could reduce initial development time.

The University of Nottingham Medical School had similar reasons for moving to an e-assessment solution in terms of time pressures of marking increasing cohort sizes. Time taken to record the marks of a cohort of 330 students has reduced from 10 hours to around 2 seconds. An additional factor here however was the desire to create more realistic, high quality questions incorporating full colour microscope slides and high resolution radiographs which are difficult and expensive to

accurately reproduce on paper. There are immediate savings in terms of printing costs and also important benefits in terms of the quality and robustness of the assessment.

It was noted that the benefits of e-assessment are seen most clearly in modules with large numbers of students where the initial outlay of time and effort will have a bigger pay-off at a later date although reusable learning objects and question banks can reduce development time and costs for subsequent activities. Similar economies of scale can be achieved on follow-up to highly innovative developments such as the simulated business environment created by the University of Glamorgan (more under skills and employability). Initial design took around three months of academic staff time and six months of multimedia developer time but the reusable design of the game platform means that two further game/case studies have been developed very quickly; one as a training simulation for a nursing course (based around a virtual hospital), the other as an induction game for all new students at the University (based around a faithfully produced virtual model of the entire campus). The development team notes that '*Other environmental possibilities are limitless*.'

A reduction in time and costs associated with marking has also been a by-product of the move to using e-portfolio solutions to support PDP. Sheffield Hallam University was driven to implement an e-portfolio system in social sciences in order to address issues of student engagement but it also notes that electronic PDP submission and provision of feedback to students have reduced the costs of these processes and the provision of ongoing feedback to students has reduced the burden of end-loaded marking.

Due to the growth in student numbers on its medical degrees, Newcastle University has experienced resource issues as students need to move further away from campus in order to find clinical placements. By using its VLE to deliver a 'regional' medical school, students can access all of the materials needed to support them in their course, no matter where they are located in the region. Support can be administrative (access to detailed exam result information), pedagogic (teaching materials and links to relevant evidence), or pastoral (communication tools). As well as having important resource implications, the tangible benefits include very high rates of student satisfaction as measured in the National Student Survey.

Similar pressures of dealing with growing student numbers are addressed at the University of Edinburgh Veterinary School by a unique collection of technology-based resources (a mixture of bespoke and commercial) that are collectively known as 'The Virtual Farm'. This approach allows the University to maximise educational assets in terms of the University teaching farms. The virtual, sitting alongside opportunities for real-world experience on the farms, has enabled the programme to manage increasing numbers of students.

The move to full economic costing and a change in incentives has resulted in increasing numbers of 'buy-outs' of academic staff at the University of Exeter. This has prompted the use of online resources and formative exercises provided by commercial publishers allowing them to develop a set of core modules which can be delivered by a number of people including temporary lecturers. The approach fits the institutional strategy of increased emphasis on e-learning and problem-based learning while also retaining core contact hours and ensuring research active staff continue to teach. Real savings in both staff time and classroom space were identified, with eight hours of tutorials per week being replaced by two 'help classes'.

Swansea University has used video-conferencing to support collaborative teaching which has allowed three institutions to overcome logistical difficulties and geographical distance, provide both students and staff with access to extra-institutional teaching expertise and introduce students to the realities and rigours of scholarly debate in real-time rather than simply in the pages of journals or conference proceedings. '*There are clear cost-saving benefits. An institution might not be able to employ four epigraphists to contribute to a single module but across three institutions there can be experts in the field'*. They have also found considerable pedagogic benefit in teaching as part of a wider team. '*I have found this beneficial … where we have been discussing complex texts and two academics can emphasise different aspects. Students seem to have enjoyed the dialogue aspect of the module especially when they see staff members explaining difficult issues .... They can also observe how academics handle scholarly disagreement in a gracious and friendly manner.*'

- **Recruitment and Retention**

The MA in Legislative Studies Online (MALSO) at the University of Hull is taught entirely online and has tapped a new market. It was created to respond to the needs of staff working in or with parliaments who were not able to take other forms of degree due to their work commitments. The

course brings together students who have a very wide range of experiences including parliamentary clerks, officials working for international organisations such as the United Nations, politicians, journalists and civil servants at local and regional level. Students come from the UK, Europe and elsewhere in the world as far afield as Canada and Kyrgystan. The on-campus MA in Legislative Studies recruits only one or two students per year. The MALSO has an average of 6 students per year and this is still on the increase. It is also a more cost-effective way of studying for the students as they save in accommodation and travelling costs and do not have the worries of visa/immigration paperwork that might affect their decision or ability to participate.

International students studying Economics at the University of Exeter reported that they found the online materials particularly user-friendly. They had often felt diffident about speaking in class whereas the opportunity to cover the materials at their own pace helped them keep up and the provision of help classes ensures that they can then seek support if they need to do so. Support such as this has a direct impact on achievement and retention of international students.

E-Assessment used by Leeds Metropolitan University for the formative development of students on its Applied Technology and Finance programme has given rise to a marked improvement in attendance and achievement. In the past, students who had previously struggled with numeracy or IT literacy were apt to drop out or fail. Personal tutors can now follow up on any absences or issues and head off early attrition. The University is also seeing an impact on recruitment as students are less apprehensive of taking a Finance subject since they get regular feedback on how they are doing.

The University of Wolverhampton is successfully supporting nursing and midwifery courses aimed at non-traditional learners via its e-portfolio system. Evidence shows that programmes such as this have a high attrition rate if students are not able to readily communicate with one another. This is backed up by the testimony of students: *'Having access to PebblePad and being able to "keep in touch" helped me immensely. On more than one occasion during placement I have had to question myself, my views and beliefs and without the aid of Pebble pad and being able to share things with you all I would I may have joined others from our community and quit!*'

- **Skills and Employability**

Many of the participants in the project talked about equipping graduates to be 'fit for purpose'. The broad skills agenda features across the broad spectrum of examples but employability and employer engagement were specific features of many developments.

There is a basic need within healthcare education to produce students who are independent and adapted to the workplace. Several of the case studies demonstrate that e-learning supports this development of the students in a more meaningful way than was previously possible. As a spin-off of current use of e-learning, medical schools are working collaboratively to produce and support a number of innovative online educational and support sites that will be used in undergraduate teaching as well as Continuing Professional Development (CPD).

Newcastle University found that they were able to move to an outcome-based curriculum as defined by the General Medical Council (GMC) which related to the needs of the NHS and other healthcare bodies. They were also able to support CPD which is central to the education of the NHS workforce. As well as making resource savings by using its VLE as a 'regional' medical school, Newcastle uses a flexible e-portfolio tool to help foster a reflective approach to evidencing the achievement of both module-specific and programme learning outcomes. The e-portfolio supports these learning outcomes and the growing demand for reflective practitioners who can manage their own continuing professional development as defined by the GMC 'Tomorrow's Doctors' report (2003).

The University of Edinburgh develops student skills through its Virtual Patient scenarios created via an in-house application known as Labyrinth. In this case, students develop learning materials that contribute to a growing bank of resources than can be used by others. Student feedback confirms that Labyrinth offers a learning experience unlike any other and that this in itself is a positive outcome in their opinion. They suggest that the activity of establishing scenarios featuring characters with a variety of decision points and possible variations of direction presents them with something close to what they imagine professional practice might be like. In short, it forces them to think like professionals rather than students. Edinburgh's Virtual Farm, whilst a very different application, also has the benefit of exposing students to a real world work environment.

Bradford University has also developed the concept of the 'simulated patient' to increase students' awareness of a social model of care and facilitate clinical reasoning skills prior to practice. E-learning provides the medium for the delivery of case-based scenarios based on actual experience, enriched with podcasts, film clips, associated digital stories and external links. Associated learning tasks facilitate the development of problem-solving skills and the opportunity to apply theory to practice in a 'safe' environment. The tangible benefits include high levels of student, staff and user/carer satisfaction, early exposure to clinical practice and a wide range of issues, from up-skilling of students and staff to alignment with national policy issues in this area.

The University of Central Lancashire has supported healthcare training in diabetes around the world thus opening up new markets through its Diabetes Education Online (DEOL) course established in partnership with local Trusts to provide accessible diabetes training for healthcare professionals. The principal aim of DEOL is to facilitate, at local level, the implementation of national policy, in the form of the National Service Framework (NSF) for Diabetes. This work has highlighted a way forward for other programmes and provision at the institution and elsewhere.

Glamorgan Business School recognised that undergraduate students often lack experience of real business environments and has created a simulation game to enable students to comprehend the differences between large and small firms in terms of how they operate, involve and interact. The tool consists of an immersive 3D environment simulating small and large business environments where students can command an avatar that moves around the environment and interacts with various characters. The environment was designed to both provide a complex realistic case study while also offering a game-like experience with competitive motivation. The game platform was deliberately designed to be reusable, to enable future development opportunities with a lower development timescale and was the preferred method expressed by most students for absorbing a case study (75% agreeing or strongly agreeing). Comments included; *'It's a better way of learning than reading the case study…'* and *'I seriously think there is no substitute for experience and this is the closest you can get – through a game'.* The simulation prepares students for employment in a way that previously only a professional placement could do.

The production of a portfolio to demonstrate professional development is made much easier by using an e-portfolio. The University of Wolverhampton was able to use its e-portfolio system to evidence the managed off-site study time activity in order to meet the Nursing and Midwifery Council theory hours requirement. The particular package used supported the learners' meaningful and reflective conversations about professional practice. The e-portfolio system has proven particularly valuable to cohorts of non traditional learners on 'family friendly' routes aiding not only their retention but also their professional development: '*By sharing ideas and group problem-solving, the family friendly students appear to be miles ahead of our full time route students in terms of their development.*'

The University of Wolverhampton also encourages the use of the blogging tool within its e-portfolio system to develop teachers on placement to become reflective practitioners. As one PGCE student put it, *'We would share war stories from the frontlines of teaching and by discussing and commenting on each other's journeys as teachers we were becoming reflective writers and practitioners without even knowing it!'*

The Hull MA in Legislative Studies Online (MALSO) course is a very effective example of a work based learning approach. Many of the instructional tasks included in the teaching programme relate directly to the students' work environment and foster a high level of integration between work experience and the course and most of the students taking the programme have the explicit support of their employer in order to strengthen their own work performance.

Hull also uses e-learning to enable it to offer students on the BA (Hons) in British Politics and Legislative Studies degree the opportunity to take a one year internship at Westminster. This has proven so popular that it is now being rolled out to support single semester internships in Westminster or Brussels, working for an MP or an MEP, for students on other politics degrees.

- **Student Achievement**

There is clear evidence that e-learning offers increased opportunities for formative assessment leading to real benefits in terms of student retention and achievement.

The University of Glamorgan implemented e-assessment for Accounting and Finance degree students in order to measure student development and identify areas for additional support, provide timely feedback in order to facilitate the self-reflective process and facilitate high quality learning

that enables students to be actively involved in their own learning. Feedback indicates that students prefer assessment online and expressed a preference for phased online assessment testing small areas of the syllabus. The students considered that the phased assessment improved their learning by encouraging them to allocate their study time appropriately throughout the year. *'I think it is easier to do a test every now and then because you are revising throughout the year, so when it comes to your last final exams you will find it a lot easier because you would have done the work all through the year.*' The supporting case study shows mean pass rates and grade point averages for a range of modules over a period of four years. The performance of students on the e-assessed module saw the most improvement and also a much better alignment of coursework and examination performance leading the author to conclude *'there is prima facie evidence that students' performance on the financial accounting module has improved as a result of changing the method of assessment*.'

Leeds Metropolitan University has seen a big improvement in the mean marks of students on its Applied Technology and Finance module since the implementation of e-assessment. A typical mark has risen from around 53% to 63%. Students have also been provided with the option to take past exam papers for practice as many times as they wish. Those taking advantage of this have an average exam mark 15% higher than those who did not.

The Hull MALSO has seen improved student performance over the on-campus version of the course as it is able to recruit students with very high levels of academic ability because it provides the flexibility for students to fit course work around their busy lives. Some of the work produced has been of publishable standard.

In the Glasgow Scottish History case study, the introduction of e-learning coincided with an overhaul of the course. The specific role of e-learning is thus difficult to quantify but results have nonetheless been transformed: the proportion of students who finished with an A grade overall leapt from 1% to 15%, while the number of 'fails' (less than D) fell from 12% to 5%. Glasgow University Department of Theology and Religious Studies has also seen an improvement in pass rates since the adoption of the VLE to support courses with previously good pass rates of 90% now increased to 100%.

The Glasgow courses using podcasts that topped the iTunes chart (see other benefits below) both have a 100% pass rate with a high percentage of firsts. Whilst this cannot be solely attributed to the podcasts, the results are symptomatic of approaches that achieve a high degree of student engagement with the learning process.

The University of Hull MEd e-learning programme was designed to provide professionals across the world with the opportunity to interact with others in a range of education and training contexts through a wholly-online Masters programme. The intention was to develop provision which would not simply attempt to replicate classroom-based teaching but exploit the opportunities and added value which the VLE offered. Participants are encouraged to work independently and collaboratively with emphasis placed on their professional working context. The use of Hull's Merlin Portfolio enhances the collaboration which is possible on the programme and ensures both secure submission of joint work, and provision for access to the complete moderation process, for programme staff and External Examiners, all within the same online environment. The External Examiner for the programme has highlighted the particular benefits students derive from the inclusion of collaborative assessment tasks, and noted the positive impact on their achievement.

- **Widening Participation and Social Justice**

The use of e-learning has undoubtedly widened participation in UK HE, be this participation by overseas students who would not previously have been able to attend courses in the UK, by professionals who need to fit study into a busy working life, or by the groups of 'non-traditional' learners who form the target of government widening participation strategies.

The University of Wolverhampton has used a personal learning space offered by an e-portfolio system in two undergraduate programmes (nursing and midwifery) aimed at widening access learners. These 'family-friendly' programmes have seen higher rates of retention and achievement than is usual on such courses. Although the evidence is based on small cohorts anecdotal evidence and figures from this may be attributable to the effective use of the e-portfolio system.

Some of the exposure of the quality and diversity of UK HE that is possible by electronic means has less quantifiable but no less tangible benefits in terms of attracting new audiences. A Glasgow Philosophy lecturer, who topped the iTunes chart with her podcasts, cites emails from adult returners to education and notes: '*From the communication I have received from my peers and*

people around the world who have listened to my Kant lectures as podcasts (downloaded from iTunes) and who now say they are going to read more philosophy or even return to education, I have probably been instrumental in widening participation in higher education.'

One additional benefit that was identified out of the workshop discussions was the concept of e-learning supporting a wider agenda of 'social justice'. This is based on the notion that the task of academics (particularly in the humanities) is not merely to 'transfer knowledge' to students, but also to foster and facilitate the creation of agents who are capable not only of independent, reflective, and critical learning, but also of independent, reflective and critical thinking about, and hence engagement with, wider society. This engagement can potentially develop into a stance best described as that of 'active citizenship'. In this sense, the widening participation agenda should not be merely policy rhetoric but should be deeply rooted in a moral and ethical stance which construes education as a public and social good. As one author comments in his case study, he takes '*a social and political view of higher education as a means to develop active and engaged citizens*'. University of Glasgow, Classics.

Those case studies which deal directly with student learning all impact upon this broad agenda of 'social justice'. This includes widening participation, increasing employment options for graduates and the provision of space for the essential consideration of different or challenging perspectives in ways that would have been impossible prior to the introduction of online and distance learning.

The Wolverhampton Religious Studies website 'Religions in Wolverhampton' supports this agenda by engagement with local communities and faith groups and, notably, one of its graduates has been employed as a Faith Development Worker following completion of the course. Sheffield Hallam University has reached out to more distant communities, such as an aboriginal group threatened by eviction who used e-resources developed for Sheffield Hallam students on their own website in order to publicise their case. The examples of education benefiting a 'social justice' agenda within these case studies illustrate the manner in which an integral part of recent national and supranational policy can be translated into educational reality.

- **Special Needs**

E-Learning offers opportunities to support learners with a range of special needs in ways which would simply not have been possible in the past. The term 'special needs' in this context encompasses a range of medical and other conditions such as recognised physical disabilities and dyslexia through to students who become pregnant during the course of their studies.

A Glasgow lecturer who has begun to make extensive use of the institutional VLE to support a range of technology-related courses notes, '*My primary aim was to use Moodle to make course administration and content delivery more efficient, rather than supporting any radically different pedagogical approach.*' However, once the VLE was in use a range of additional benefits became clear, *'The most noticeable benefit came when teaching a blind student for the first time this year … without Moodle the quality of support we were able to offer this student would have been greatly diminished and I doubt that they would have been able to perform to the best of their ability.*'

Nottingham University has invested heavily in its e-assessment system and notes that failure to address potentially discriminating features of an assessment can result in students with certain forms of disabilities being unfairly disadvantaged. The University has enhanced its online assessment system to afford a wider range of accommodations, the main aim being to focus on the measurement of subject matter understanding rather than a student's ability to interact with a particular assessment format. Analysis of applicants awarded places at the University of Nottingham reveals self-reported rates of disability ranging from 3% to 9% across different faculties hence a significant proportion of students will benefit from these enhancements.

Swansea University's podcasts on the 'Archaeology of Greek World' provide students with mobility difficulties a means of accessing archaeological sites that would be virtually impossible for them to visit in person.

The case study from Glasgow University Department of Theology and Religious Studies showed that students with special needs found e-learning supported their studies to such an extent that they had a 100% retention rate. The range of special needs accommodated includes a student with mobility difficulties who could only work from home, a student with clinical depression who did not miss out on material if unable to attend in person and a student who completed her degree online during pregnancy.

The University of Derby offers its Business Studies courses in a variety of modes and notes that those opting for the wholly online degree tend to be mature learners often with 'unusual' profiles. The existence of an online version of the course also offers a safety net for learners who might otherwise not complete their course of study. *'A number of students have been unable to continue with the on-campus study for a variety of personal reasons. Instead of having to abandon their studies altogether, they have been able to complete their degree online…"*

- **Other Benefits**

The range of other tangible benefits includes external (international) recognition of the quality of UK HE, the professional development of staff and improved pedagogic approaches.

A Glasgow Philosophy lecturer who used podcasting to support students was amazed that her podcasts reached number one in the iTunes Higher Education chart in November 2005. Her work, and hence the University, gained international recognition having beaten academics at Harvard and Berkeley to reach the top spot and gaining a lot of attention in the press (MacLeod D 2006). She notes, '*We did anticipate that there would be effects on learning and reflective practice, and that the students would develop new learning skills, for example, the annotation of recorded material, and we were keen to encourage the participation of weaker or less confident students and any student who might be unwell and necessarily away from the University. However, we had not anticipated the enthusiastic uptake of the podcasts by the students, or that our experience would influence University e-learning policy. … We have certainly influenced the Institutional policy. With the success and publicity I have had, particularly in relation to the Kant podcasts, the University has decided to invest in podcasting for the future*.'

The professional development of staff in UK HE is another beneficial aspect of new forms of learning and teaching. Being involved in applying e-learning can be invigorating for many, resulting in an increased awareness of student needs and better teaching. New skills are required for developing e-learning materials and supporting students in online environments aligning with strategy developments aiming to develop standards for a 'licence to practise' mainly in skills-based areas.

Improved learning and teaching practice is a major driver behind many of the developments and 84% of the case studies reported improvements in this area. Quotes relating to this include:

'*I have a constructivist approach to learning and teaching that, on the one hand expects the student to take responsibility for their learning, but on the other a responsibility on my part to provide a range of teaching support to enable this. Aside from recognition of different learning styles I am also acutely aware that today's learning environment is far more demanding. The pressures of loans, debt, work, family commitments and a changing student demographic combine to make the traditional face to face contact limiting as the sole mode of delivery*.' University of Glasgow (HATII).

'We increasingly felt that students were not always preparing exercises in advance of the class, nor were all of them prepared to participate in discussion… We therefore decided that linking each lecture with an associated exercise, and referring to it both before and after the students had completed the exercise would reinforce the lecture-based learning.' University of Exeter (Economics).

7. Conclusions

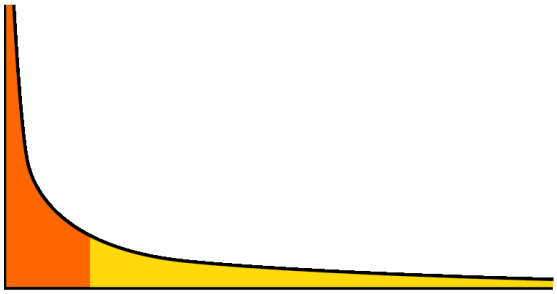
We discuss some of the wider implications of these studies in the following section. It is however inevitable that those commissioning a study of tangible benefits will wish to see some illustrative figures to indicate what the benefits we have identified may mean for the sector as a whole. It is difficult to know how far one can extrapolate figures from what is a relatively small set of case studies. The subject areas sampled are however believed to be representative of their discipline and thus represent the subjects studied by 42% of the HE student body in 2005/06 (Source HESA 2006). A few tentative observations may perhaps be made:

- It seems reasonable to assume that the savings in staff time seen as a result of implementing e-assessment at Nottingham could probably be widely replicated across both the Health and BMAF/Economics subject areas (although there is less evidence of immediate applicability in Humanities). Assuming the student body in these areas sat one e-assessed exam per year this alone would represent a saving of c. £7 million in staff time. Multiplying the possibilities up we can see that full potential for savings and improved resource usage is extensive

- Those who have provided figures for student achievement appear to be recording improvements of around 10% in pass rates as a result of the e-learning they have implemented. Across the board this might mean over 30,000 additional graduates each year and a subsequent uplift in the UK skills base
- We have seen evidence that e-learning is enabling Schools of Medicine and Veterinary Science to take additional student numbers without having to increase their physical or staffing footprint. An increase of only 1% in student numbers in these areas would be worth £11 million to the institutions concerned
- There is clear evidence of improved student retention as a result of the improved personalisation and mentoring opportunities afforded by e-learning applications such as e-portfolio systems. We have seen these benefits demonstrated in areas such as Nursing with a high proportion of non-traditional learners where attrition rates are traditionally high. An improvement of only 1% in retention across the sector would, even at the lowest rates of funding, be worth over £132 million per annum to institutions
- E-Learning can be shown to have a range of benefits for learners with special needs. Learners with a known disability currently make up only around 6% of the HE student population (source HESA 2006) as opposed to 11% of the FE population in England (14% in Scotland) and 18% of the working age population of England. It would thus seem a desirable objective to double the participation rate of students with a disability in HE. Even at the lowest rate of funding this represents a market worth £796 million to the sector

On a different note, e-learning also offers opportunities to tap entirely new markets both at home and overseas. Whilst global markets mean increasingly fierce competition for students, e-learning can facilitate diversification of the offering. The phrase 'The Long Tail' (Anderson 2004, 2006) is used to describe certain business and economic models such as Amazon.com that can sell a greater volume of, otherwise hard-to-find, items at small volumes than of popular items at large volumes. The term Long Tail is also the colloquial name for a long-known feature of statistical distributions which resemble the graph below.

Figure 3. The Long Tail Curve



In these distributions a high-frequency population is followed by a low-frequency population which gradually 'tails off'. In many cases the infrequent or low-amplitude events, the long tail, represented here by the yellow portion of the graph, can make up the majority of the graph.

In other words, the majority of Amazon's sales come not from blockbuster bestsellers but from obscure books that are not available in the majority of bookshops. Brynjolfsson *et al* (2003) show that, while most of the discussion about the value of the internet to consumers has revolved around lower prices, consumer benefit from access to increased product variety in online book stores is ten times larger than their benefit from access to lower prices online. Thus, the primary value of the internet to consumers comes from releasing new sources of value by providing access to products in the long tail.

The principles of Long Tail economics may be equally applicable to the education sector in terms of the opportunities afforded by e-learning to tap into niche markets. This is particularly the case in post graduate studies and we can see a good example of this in the Hull MALSO course where e-learning has made possible the creation of a highly specialist course attracting a worldwide customer base. The potential for other institutions to diversify in this way is evident.

The above figures and opinions could no doubt be contested in all manner of detail but they give a broad indication of the kind of difference e-learning is making in the sector. The most fundamental point to come out of all of the case studies is that the appropriate use of technology is leading to

significant improvements in learning and teaching across the sector and that this is translating into improved satisfaction, retention and achievement. E-Learning is facilitating the expansion of the sector without necessitating corresponding increases in the footprint of the physical estate and it is allowing broadly the same numbers of staff to educate a larger and more diverse student body. The kind of high quality, diverse, accessible, expanding higher education system desired by government and funders is no longer possible without e-learning. As our graphs show, the sector is investing in a diverse range of solutions under the e-learning banner, some of which are moving to maturity whilst others represent research and development activity. Continued investment and innovation in the field of e-learning is essential if the UK is to remain a world leader in education.

8. Implications

It may perhaps be worth noting at this point that, despite the diversity of the 37 case studies, we had little problem assigning each of them to one of the activity areas within the JISC e-Learning Programme. This may be viewed as an endorsement of the fact that the Programme is addressing areas of current relevance to the sector and will be a contribution to the collection of resources in these areas.

This snapshot of activity has implications for the sector as a whole. Whilst this report draws out some specific recommendations for the JISC, it is not possible to do likewise for individual institutions so we have used this section to simply highlight some issues that institutions might like to consider in their forward planning.

Institutional strategies are useful in providing a long-term vision and top-level support for initiatives that improve learning and teaching but they are rarely the key drivers for innovation. Many innovations are still the province of the individual striving to improve their teaching practice and the learning opportunities for their students or solve some of the problems that they face. Institutional strategies are enabling the developments to take place rather than being the drivers themselves. Many of the case study authors report that time invested in these projects is personal time. Some implementations, for example e-assessment, appear at first to be driven by the need to support a growing number of students and the need to save time but closer reading of the case study shows that the commitment by the lecturer is due to a professional interest in improving the quality and timeliness of feedback - assessment for learning. Strategic support is nonetheless necessary at least to demonstrate that innovations in teaching and learning are important to the university.

Such institutional approaches can however be counter-productive when they translate into ‘quotas’ for some form of e-learning. Academic culture is notoriously hostile to having things imposed in a top-down manner and participants noted the often ‘mulish response’ elicited by such directives. The most successful approaches are those that are driven by the desire to improve learning and teaching practice and where the institution provides the tools and the support to do this. There was a lot of discussion around emergent versus planned strategies during the project and some institutions are already implementing a collaborative approach to strategy development e.g. Swansea has open monthly meetings of a Community of Practice and it is intended that its next Learning and Teaching Strategy will come out of the work of this group.

Institutional strategies and policies are struggling to keep pace with developments in social and collaborative learning tools (the so-called web 2.0 phenomenon). We encountered one example of a lecturer who has created a resource of over 1,000 YouTube and Google resources and is still awaiting an institutional policy decision on whether students should be encouraged to use such resources. Although not a new issue, particular sensitivities also arise in the humanities where students may need to be able to critique potentially offensive material such as racist websites. It was noted that institutions need to be more nuanced than having blanket bans on particular technologies or types of material.

Institutions may find it helpful to reflect on their e-learning activities in relation to some form of the graph used to map these case studies. The diagonal line on the diagram indicates that a correlation between the e-approach taken and the type of problem being addressed may exist. If so, then differing management approaches for the differing problem-types (and their associated solution-types) may help to maximise the tangible benefits from the investment of resources made. Moreover, ideally, a faculty (or other large unit) should consider having a balanced portfolio of projects - as one or two *automate / informate down* projects may be used to free-up resources for one or two *transformational* projects. Projects in the middle area of the two *automate* areas will, if successful, provide some resource savings whilst simultaneously improve the pedagogy -

addressing (as they do) areas such as student satisfaction and retention. Also, by balancing the project portfolio, more examples will be available to other members of staff, as Schein (1989) concludes, 'A common diagnostic error ... is to assume that the resistance to change is only the lack of motivation or the unwillingness to put out the effort to learn something new. Much more likely is the defensive avoidance that results from inability to face one's own presumed inadequacies if one does not feel psychologically safe... role models not only provide behavioural clues on what to do, but, more importantly, permit the target to psychologically identify with the model and, thereby, absorb some of the new cognitive point of view.' (pp. 4-5). A balanced portfolio of projects may ensure that a faculty is both efficient (*automate / informate down* projects), effective (the middle of the two *informate* area projects) and sustainable (the *transformational* projects).

The exchange of ideas between different institutions and disciplines is valuable but tutors need support in their own institutions to be able to put the concepts into their own context. Institutions that do not have the infrastructure to facilitate this (e.g. a core of learning technologists) are suffering and this gap cannot be bridged by sector-wide advisory and support services alone. '*It is the rolling up of sleeves and getting down to it not just the advice*.'

As well as appropriate forms of staff development, institutions need to consider the pre-requisite knowledge and skills necessary for students to make the most of the available technologies. Wolverhampton funds student mentors in learning resource centres as well as student union activities throughout the year and Glasgow has a pre-session period where students learn to use the VLE. This kind of support can represent a significant investment decision e.g. is it worth losing one or two weeks of conference trade in order to achieve expected benefits in student retention?

Related to this is the observation that institutional decision-making requires a matrix approach such that key decisions are not taken solely by people who are divorced from the learner context. Decisions taken on economic grounds can have pedagogic implications and understanding the implications requires an understanding of the profile of different learner groups.

Whilst there are more obvious technology barriers (in terms of staff awareness and familiarity) in some disciplines than others it was noted that resistance to some developments is as much about the concepts as the tools. For example, some disciplines don't buy into the concept of PDP. They may have done a certain amount of personal tutoring but they view PDP as a considerable amount of additional work and not the 'proper' role of the academic. It appears that the divide lies along academic/vocational lines with subjects such a medicine having the approach well embedded.

If the sector is to avoid being in a position of constantly playing catch-up, we need to do more analysis of the kinds of technologies learners are using and the virtual social environments students engage in as part of their everyday lives. All academics need exposure to current technologies and some ideas about how they can be applied to learning and teaching. This should be an essential part of all PGCE courses. We also need to look and plan further ahead. One participant in the project noted that *'Technology horizon scanning seemed too wacky and far-off to be of relevance to me until I participated in this project. I now see the value of thinking about this*.'

We need to think about the above in relation to the design of learning materials and activities. VLE interfaces can often seem 'clunky' and dated in comparison with the interfaces students are used to in social and gaming environments. There is a general trend towards more visually-rich media in all areas of society and it can enhance learning, as this quote from a Sheffield Hallam student shows; '*Sometimes I find it easier to retain information on a topic if I have a visual memory of it. Also, I believe the visual representation of a topic can provoke an emotional response within an individual which in turn helps them connect with the subject and stimulate interest. I am very much in favour of video/ visual methods within teaching, and I think it should be used more frequently.'* Institutions need to be able to respond effectively balancing a range of issues such as student expectations, bandwidth and accessibility.

In contrast to the above, we also need to note that technology is not a given in all contexts. The tendency to assume that everyone has access to broadband technology is erroneous and the issue of a 'digital divide', whether at home or when trying to reach overseas markets, is likely to be with us for some time to come.

Finally the sector needs to focus on the appropriateness rather than the source of technology and to be increasingly open to the use of technology that was not originally developed for education. Podcasting and iTunes, for example, can bring demonstrable benefits to learning and teaching.

9. Recommendations

9.1 Recommendation: The JISC to support dissemination of the outputs via its e-Learning Communications and Dissemination budget.

The 37 case studies produced by this project are a valuable resource for the sector. The media-rich nature of many of the resources lends itself (as might be anticipated) to dissemination as a searchable web resource although there is also considerable potential for a 'glossy' promotional booklet as well and perhaps a high-level strategic briefing. The dissemination of the case studies and production of associated promotional material was excluded from the scope of this project due to the tight timescale and it was agreed that, subject to achieving worthwhile outputs, the JISC e-Learning Communications and Dissemination Group would be approached to provide funds for dissemination activity.

9.2 Recommendation: The CAMEL model has been shown to be effective and is worth the investment of necessary minimum levels of time and funding for future projects.

There were particular pressures to deliver results very quickly in this project and a (not unexpected) recommendation is that future projects of this type should take place over a longer timescale if they are to gain the full benefits of CAMEL as a model. The need to continue to fund such initiatives, even at a relatively low level to cover basic travel and hospitality, as an effective form of capacity building should be noted.

9.3 Recommendation: The JISC to consider supporting work on strategy and policy relating to web 2.0 technologies.

We have noted above that institutional strategies and policies are struggling to keep pace with developments in social and collaborative learning tools. JISC may wish to look at how the development of e-learning strategy and policy is coping with the web 2.0 era. N.B. It may be possible for JISC infoNet to include this in a set of work packages around Strategic Planning about to be undertaken for the JOS committee.

9.4 Recommendation: The JISC to address the conceptual barriers to PDP in its e-portfolio activity area.

Interestingly, in view of the comments above about resistance to the PDP concept, all participants noted that the use of e-portfolios could be of considerable potential benefit in their disciplines. The recommendation is that the JISC e-portfolio activity area needs to work with champions who can sell the concepts as well as the tools and that dissemination products need to demonstrate the benefits in a wide range of subject contexts.

9.5 Recommendation: The JISC to consider further work with an element of discipline focus.

It was noted that both JISC and the Academy tend to approach projects at the institutional level and this project was novel in having a disciplinary element to it. It was suggested that the discipline is an in-built synergy as opposed to the artificial synergy we often try to create by bringing senior managers together. There was strong support for the value of groups of discipline-focused case studies although to some extent the strong discipline voices were countered by the number of participants who greatly valued the inter-disciplinary elements of the project. From the JISC infoNet perspective, it is the shared passion for learning and teaching that makes an effective Community of Practice. It is suggested that JISC could do more to capitalise on the 'built-in synergies' of the subject disciplines as a starting point to facilitate exchange across disciplines.

9.6 Recommendation: The JISC to work with the Academy Subject centres to promote the Social Software infoKit and related project outcomes and to consider a workshop programme on social software.

There was a general view that the 'average academic' requires far more in the way of exposure to the tools and technologies in use by 'Generation Y' students or 'Millennials'. JISC is currently funding a number of projects of relevance in this area and the forthcoming JISC infoNet resource on Social Software will help to give this a focal home and context. The JISC should consider whether there is a need for a workshop programme on this topic.

9.7 Recommendation: The JISC to consider whether further research into VIPER technology is warranted.

The issue raised above that ‘technology is not a given’ has implications for the type of emerging technologies that need to be explored. VIPER (Voice over Internet Protocol Extended Reach) is one such technology that may be able to address some of these issues. In a paper given to the Academy Business, Management, Accountancy and Finance Annual Conference 2007 by John Beaumont Kerridge of Bedfordshire, it was claimed to have a low bandwidth requirement enabling it to function where other, more demanding MDC (Middleware for Distributed Cognition) software applications might not have been possible and to require a relatively short learning curve. The JISC should consider whether further research into this technology is warranted.

References

Anderson, C. (2004) "The Long Tail" by Chris Anderson, *Wired*, Oct. 2004 (Archived version)

Anderson, C. (2006) The Long Tail: Why the Future of Business is Selling Less of More

Brynjolfsson, E; Yu, J; Hu, & Smith, M.D. (2003) "Consumer Surplus in the Digital Economy"

General Medical Council (2003) Tomorrow's Doctors http://www.gmc-uk.org/education/undergraduate/tomdoc.pdf

MacLeod D (2006) 'Kant take my iTunes off you' Education Guardian http://education.guardian.co.uk/higher/news/story/0,,1972016,00.html

Oliver, M. & Conole, G. (2003) 'Evidence-based practice and e-learning in Higher Education: can we and should we?' Research Papers in Education 18 (4), 385-397

Schein, E. H. (1989) The Role of the CEO in the Management of Change: The Case of Information Technology. MIT Press, Cambridge, Mass.

Zuboff, S. (1988) In the Age of the Smart Machine. Basic books, New York.

Appendix 1 - Case Study Cover Sheets

University of Birmingham and Coventry University: Tech-supported learning environments. Economics, Business and Finance – Case study

The case study describes a programme to make better use of a widely-available resource-package (WinEcon) through targeted interventions in Economics departments, firstly in the West Midlands and then throughout the UK. The package is primarily useful to level 1 students, although it may be of use in some postgraduate contexts, e.g. MBAs. The WinEcon consortium was also encouraged to make changes to the package to improve its usefulness. Reported benefits include an improvement in student satisfaction with the learning process as a result of making greater use of the WinEcon resources. The development of a UK-wide dissemination process is also seen as a considerable strength of the programme.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

☐ Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

☐ Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

☐ Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 'sound bites' from the case study,

"The results indicate …a significant improvement in student learning and satisfaction with the learning process."

"A key feature of this project is the dissemination process, which could be readily applied to other disciplines."

University of Bradford: Learning resources and activities. Health - Promoting the patient perspective in pre-practice education through blended learning

A blended learning approach was developed to increase student's awareness of a social model of care and facilitate clinical reasoning skills prior to practice. E-learning provided the medium for the delivery of case based scenarios based on actual service user experiences, enriched with podcasts, film clips, associated digital stories and external links. Associated learning tasks facilitated the development of problem solving skills and the opportunity to apply theory to practice in a 'safe' environment. The tangible benefits included high levels of student, staff and user/carer satisfaction, early exposure to clinical practice and a wide range of issues, up-skilling of students and staff and alignment with national policy issues in this area.

☐ Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Recruitment (e.g. students or staff; accessibility; new markets)

☐ Retention (e.g. students or staff)

X Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on social justice agenda such as WP or accessibility

Sound bites:

"Student evaluation demonstrated a high level of satisfaction with the teaching and learning strategy, especially for the perceived degree of relevance to future practice."

"I enjoyed the session which for me reminded me of the importance of clear concise communication and reinforced the need to involve the patient/family in the discussion to avoid taking to much control and not allowing for their voices/opinions/concerns to be heard which could be the discussion less effective. The actors were great and made the scenario very realistic."

"I thought the session was really excellent. It really opened my eyes to different communities and changed my perspective on some issues."
"There has been a noticeable improvement in staff satisfaction with, and enthusiasm for, e-learning … within the department and across the School of Health."

University of Central Lancashire: Learning resources and activities. Health - Accessible online diabetes training for healthcare professionals

Diabetes Education Online (DEOL) has been established in partnership with local Trusts to provide accessible diabetes training for healthcare professionals. The principle aim of DEOL is to facilitate, at local level, the implementation of national policy, in the form of the National Service Framework (NSF) for Diabetes. The philosophy that we have adopted encompasses primarily those theories associated with constructivism. This approach takes into consideration the personal interpretation involved in learning, recognising that experience, past and present, will have an impact, as individuals develop their own understanding of a concept. Yet the very nature of the module dictates that comprehensive access to both literature and policy is made available, providing a framework within which discourse can take place. The tangible benefits of this approach include flexibility for students, enabling them to study when it might not have been possible any other way; pedagogically sound educational underpinnings, developing communities of practice. This work has highlighted a way forward for other programmes and provision at the institution and elsewhere.

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

☐ Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

☐ Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Recruitment (e.g. students or staff; accessibility; new markets)

☐ Retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on social justice agenda such as WP or accessibility

Sound bites

"I have enjoyed it very much, it is a lot of new information and is intensive but I have got a lot out of it"
"As online I could access when convenient to myself as and when I wanted. This benefited me as I had no travelling to UCLan on a day off and hence more time to devote to study."
"One student stated that they were very impressed by the web site itself and the way it was constructed and how it encouraged them to think, read and learn."
"External examiners, validation panels and service user forums have all commented positively on the e-learning courses and highlighted some as examples of best practice."

University of Derby: e-Assessment case study. Economics, business and finance – Case study

This case study reports on the impact of introducing custom built computer based formative learning and assessment materials for a 1st year economics module in a large business school. The aim was to reduce failure rates by improving self-regulated learning on this large module (300 students). The materials (using TRIAD software) were designed to follow good practice in computer-based formative learning with substantial feedback, open access, and interactive activities, closely linked to lecture materials and tutorial activities. The project was evaluated by collecting data on outcome summative assessment results, and individual student data on skills, engagement with formative learning, tutorials etc., and quantitative analysis using an activity model design. The results show that the computer based formative learning improved student outcomes, student satisfaction, reduced drop out rates and increased self-regulated learning. The expertise developed was used to widen staff use of e-assessment within the School and extend the use of computer based formative learning and assessment.

This case study illustrates:

x Effect on learning (e.g. context, style, insight and reflective practice)

x Effect on exam results

x Effect on student personal development (e.g. skills, employability, confidence)

x Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

x Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

x Influence on educational research

x Staff satisfaction with e-learning

x Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

x Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study,

"The aim was to reduce failure rates amongst full-time students through improving self-regulating learning through computer based formative private study."

"Overall, we believe that our formative e-learning approach benefits the majority of students and generates strong positive feedback from students."

University of Derby: Learning resources and activities. Economics, business and finance – BA Business Studies

This case study illustrates:

The case study describes the development of a fully online BA Business Studies degree. The aims of this development were to allow greater flexibility for home students juggling work and study commitments, and for international students, to study for the degree remotely – and to study within flexible time sales. The degree is now hosted on an institutional VLE. Reported benefits include increased student recruitment and retention, and student satisfaction with the offering. Staff have needed to be supported to embrace the new mode of delivery.

☐ Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

☐ Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

☐ Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

☐ Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

X Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study,

“A number of students have been unable to continue with the on campus study for a variety of personal reasons. Instead of having to abandon their studies altogether, they have been able to complete their degree online…”

“Very pleasing this year has been the achievement by an online student of a first class honours degree.”

University of Derby: Learning resources and activities. Economics, business and finance - MSc Strategic Management

The case study describes the development of a fully online MSc degree in Strategic Management. The aim of this development was to increase student recruitment in sub-Saharan Africa. The degree is hosted on an institutional VLE. Few benefits are reported, as severe technical limitations affected the implementation – particularly bandwidth issues. Staff satisfaction with this development was also problematic. The case study has serious implications for top-down management approaches for the development of e-learning initiatives and it also emphasises the need for an awareness of the technological environment in which the e-learning initiative is intended to operate.

☐ Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

☐ Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

☐ Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study,

"Over the past five years there have been developments in the way of designing the materials for e-learning modules. This has moved the process from teaching to facilitated learning…"

"… it is not feasible to overcome fundamental infrastructural problems in sub-Saharan Africa or with other students who do not have satisfactory access to effective, cheap connectivity… Most sub-Saharan students do not have access to connectivity better than 10 to 20kbs dial-up internet."

University of Edinburgh: e-Assessment. Health– e-assessment in medicine and veterinary medicine

This case study describes an Online System for Clinical Assessment (OSCA) which was developed in-house by the College of Medicine and Veterinary Medicine's Learning Technology Section to support the delivery of online Objective, Structured, Clinical Examinations (OSCE) assessments in the undergraduate medical degree programme (MBChB) and undergraduate veterinary degree programmes (BVM&S). The tangible benefits include significant savings of resources; higher quality examination materials potentially incorporating multimedia (not able to be delivered in any other way); and improved quality assurance of the examination process.

☐ Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

☐ Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Recruitment (e.g. students or staff; accessibility; new markets)

X Retention (e.g. students or staff)

X Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on social justice agenda such as WP or accessibility

Sound bites

"The feedback from students suggests that the question-delivery interface is clear, the navigation through question sections is clear, and the range of question types and their presentation is also satisfactory. They, on the whole, perceive it to be an appropriate and "professional" way of conducting exams."

"virtual OSCE stations … has reduced the number of physical OSCE stations and consequently the manpower needed to support them. Since OSCE examinations are auto-marked has also resulted in considerable savings in staff time."

"the chances of student collusion … are significantly reduced"

University of Edinburgh: Tech-supported learning environments. Health – The virtual farm

This case concerns a collection of technology based resources (a mixture of bespoke and commercial) that are collectively known as 'The Virtual Farm'; a learning and teaching resource embedded within 'The Virtual Veterinary Practice', an online resource delivered via a bespoke VLE (EEVeC) developed to support the Edinburgh BVM&S programme. The tangible benefits include maximising educational assets in terms of the University teaching farms, grounding student learning with direct responsibilities in practice, peer support, and an invaluable demonstration of the potential for 'virtual/real world learning' in a relatively safe environment.

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

X Recruitment (e.g. students or staff; accessibility; new markets)

☐ Retention (e.g. students or staff)

X Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)
X Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on social justice agenda such as WP or accessibility

Sound bites:

"Students learn new skills particularly data handling and statistical skills but they have greater exposure, albeit in a virtual environment, to practices and procedures on working farms. The virtual sitting alongside opportunities for real-world experience on the farms will enable the program to manage increasing numbers of students."

"…having personalised relationships with subsets of herd data (through their adopted animals) allows this interest in the well-being of individual animals to scale up to a richer appreciation of herd/ flock health and performance generally."

"…a system for carrying out statistical analysis of specially contrived groups of animals which are derived directly from the virtual farm and used for specific teaching purposes. This effectively allows the virtual farm to become a real-time teaching and learning aid in lectures and tutorials."

"…open discussions between students, teaching staff and farm workers … provides good transparency of practice and promotes dialogue where previously there could be a great deal of isolation."

University of Edinburgh: Tech-supported learning environments. Health - Virtual patient cases developed by students using Labyrinth

This case concerns the creation of branching pathway virtual patient cases by Y5 undergraduate vet students using the Labyrinth application developed by the College of Medicine and Veterinary Medicine's Learning Technology Section at the University of Edinburgh. In this case students develop learning materials able to be used by others. This contributes to their teaching skills (essential in all healthcare professionals), promotes learning on a 'see one, do one, teach one' basis (constructive model) and deep learning in an area of interest to the student. Tangible benefits include student involvement in the development of the curriculum and teaching materials, significantly increased student and staff satisfaction with and enthusiasm for e-learning, peer support and use of online web 2.0 software, and production of useable learning materials for elsewhere in the course.

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Recruitment (e.g. students or staff; accessibility; new markets)

☐ Retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on social justice agenda such as WP or accessibility

Sound bites:

"*Student (verbal) feedback (as recorded on minidisk) confirms that Labyrinth offers a learning experience unlike any other – and that this in itself is a positive outcome in their opinion. They suggest that the activity of establishing scenarios featuring characters with a variety of decision points and possible variations of direction to be taken through scenarios presented them with something close to what they imagine professional practice might be like. It, in short, forced them to think like professionals rather than students which, they suggest from their point of view of students very close to graduating…"*

"*It is a notable feature of this activity that it is the students who effectively author their own learning activities and to do this requires consolidation of existing knowledge, learning new knowledge, applying knowledge to a virtual representation of a real world scenario, better understanding of the learning process and reflection on veterinary practice. Direct staff engagement with the activity is limited largely to the opening familiarising session and the closing presentation/assessment session. Staff are contactable by email to address any queries either technological or pedagogical in nature but in fact this has not generated any significant amount of extra work.****"***

University of Exeter: Tech-supported learning environments. Economics, business and finance - Online economics texts

The case study describes a programme to make fuller use of online (and hardcopy) texts - including case studies, videos and online exercises - provided by commercial publishers. The aim of this programme was to improve student engagement with level 2 concepts of Business and Economics, whilst simultaneously reducing teaching staff time commitments. Students were encouraged to buy the appropriate textbooks, and thereby gain access to the supporting online resources provided by the publishers. Supporting "help" classes for the new approach were also provided. Reported benefits include high student retention rates, increased staff enthusiasm for e-learning, improved access to resources for students, savings in staff time, and associated space savings.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

☐ Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

X Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study

"We increasingly felt that students were not always preparing exercises in advance of the class, nor were all of them prepared to participate in discussion… We therefore decided that linking each lecture with an associated exercise, and referring to it both before and after the students had completed the exercise would reinforce the lecture-based learning."

"International students reported that they found the online materials particularly user-friendly."

University of Glamorgan: e-Assessment. Economics, business and finance - The use of phased online summative assessment on a first year undergraduate accounting module

The case study describes the development of a phased online summative assessment tool for level 1 Accounting and Finance students. The aim of this development was to improve students' performance and engagement by providing timely information about their performance at periodic intervals throughout the year. A mature tool was used for this development (Question Mark Perception), However, considerable staff time was involved in developing the bank of 400 questions that were needed to ensure the requisite unpredictability of the students' questions. Reported benefits include improvements in overall pass rates, and improvements in student satisfaction with the learning experience – resulting from more timely feedback.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

☐ Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study,

"Students considered the phased testing and the feedback they receive to be timely and useful in the learning process…throughout the year."

"Yeah, if you take the tests away … I wouldn't work through the year to the same extent." [student comment]

University of Glamorgan: Tech-supported learning environments. Economics, business and finance - Business games

The case study describes how traditional business case studies may be supplanted by (computerised) simulation-games to foster greater student learning. Although the particular game described in the case is for level 2 business students, the game was developed from scratch in Flash, and is reusable in other educational discipline contexts. Reported benefits include a strong preference from students for this type of learning – as opposed to traditional textual case studies, and an enthusiasm from other academic staff for this approach. As the tool was developed from scratch considerable resources were necessary to develop the first game, although it is hoped that future developments will be much less resource-intensive.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study,

"The particular value of this tool and blended learning experience came for students in terms of … ways of thinking about theories and how they relate to organisations .. this experience engaged students' interest and encouraged them to engage further in both tutor-led and private study."

"Just listening to [the Lecturer] speaking, speaking, you might fall asleep but if you're playing a game you won't fall asleep." [student comment]

University of Glasgow: Tech-supported learning environments. Humanities - Glasgow Classics using technology to teach

The course was a thematic and generic one, examining the Greek genre of ''paroidia'' (hexameter parodic verse) and some related/comparative material (satyr play, comedy, parodic vase-painting, prose parodies by Lucian). The aim was to integrate online and face-to-face seminar-based learning (a form of 'blended learning'). This is part of a series of Honours modules that emphasises students' roles as active learners and critical thinkers. Comparison is made throughout with a similarly structured course run in the previous year.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

☐ Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"In terms of assessment, this ... showed strong performances from the students"

"At its best, there was genuine dialogue between the students and some challenging arguments developed through the discussion, both f2f and online."

University of Glasgow: Learning resources and activities. Humanities - Philosophy

This case study reports on the use of podcasting in two Senior Honours Philosophy courses; Consciousness and Kant. The intention was simply to provide the students with another resource to support and enhance their learning experience. We did anticipate that there would be effects on learning and reflective practice, and that the students would develop new learning skills, for example, the annotation of recorded material, and we were keen to encourage the participation of weaker or less confident students and any student who might be unwell and necessarily away from the University. However, we had not anticipated the enthusiastic uptake of the podcasts by the students, or that our experience would influence University e-learning policy.

The Consciousness class has used podcasting in each year of its delivery, and the Kant class has always produced good, committed and hard-working students.

This case study illustrates:

x Effect on learning (e.g. context, style, insight and reflective practice)

x Effect on exam results

x Effect on student personal development (e.g. skills, employability, confidence)

x Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

x Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

x Influence on educational research

x Staff satisfaction with e-learning

x Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

x Influence on retention (e.g. students or staff)

x Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

x Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

x Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"We have certainly influenced the Institutional policy. With the success and publicity I have had, particularly in relation to the Kant podcasts, the University has decided to invest in podcasting for the future and Joe Maguire's expertise and enthusiasm is now being recognised - he has been given a full-time job working between the Teaching and Technology Unit and Computing Science."

"From the communication I have received from my peers and people around the world who have listened to my Kant lectures as podcasts (downloaded from iTunes) and who now say they are going to read more philosophy or even return to education, I have probably been instrumental in widening participation in higher education."

University of Glasgow: Tech-supported learning environments. Humanities - Humanities Advanced Technology Information Institute

The case study discusses the incorporation of course material (digitized images, lecture notes and administration details and multimedia) and discussion forums into a VLE platform (Moodle) for the courses in Multimedia Analysis and Design, 2D Digitisation, Document Encoding at the Humanities Advanced Technology Information Institute, University of Glasgow.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

☐ Effect on student personal development (e.g. skills, employability, confidence)

☐ Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

☐ Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"Moodle, and before that icampus, have enabled me to achieve what I wanted; an integrated and efficient means of providing course material and communication online. I could, and perhaps should, have experimented more with how I taught, but in a subject that is itself about the appropriate use of ICT I'm aware that sitting behind the 'bleeding edge' is no bad thing. In particular I remain to be convinced that the benefits of developing online discussion forums further outweigh the costs, at least for the characteristics of my current student cohort."

"The most noticeable benefit came when teaching a blind student for the first time this year. Having the entire course content online was certainly beneficial although it also exposed weaknesses in my composition of PowerPoint slides and the way I explained material in lectures. However, without Moodle the quality of support we were able to offer this student would have been greatly diminished and I doubt that they would have been able to perform to the best of their ability."

University of Glasgow: Tech-supported learning environments. Humanities - Divinity using technology to teach

Use of VLE (Moodle) to teach and deliver course handouts and other course material to undergraduate students of the University of Glasgow Department of Theology and Religious Studies (level 1 initially). The project certainly delivered some tangible benefits in line with institutional strategies. Since the courses were developed in 2005, the University has strengthened its resolve to make more use of the VLE, and our department has a greater number of experienced staff than some other departments in the University, which means we ought to be able to meet some of the challenges. There were also significant benefits in the form of support to students with special needs. This case study illustrates:

x Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

x Effect on student personal development (e.g. skills, employability, confidence)

x Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

x Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

x Staff satisfaction with e-learning

x Effect on staff personal development (e.g. skills, employability, confidence)

x Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

x Influence on retention (e.g. students or staff)

x Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

x Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

x Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

x Effect on management of learning assets (e.g. institutional IP, repositories)

x Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"I personally have learned that students are keener than many staff to get to grips with technology in learning. Some of my colleagues may be easily persuaded to use the VLE, but many others see it as a chore. Therefore I think it is necessary for students to be given opportunities to insist that staff provide what they need and expect from technology in teaching. At the same time, staff ought to recognize their responsibilities to provide for student needs without waiting for student pressure before a response is made."

" In 2005 we decided to progress to e-learning: we wanted to make it more immediately available to our distance students, and to use the learning materials with our 'regular' (campus-based) students. We also hoped that putting it in a VLE would help us to market the degree overseas and to market individual modules as stand-alone modules. We had about three enquiries per week from overseas students, but were ultimately unable to develop either the full online degree or an overseas recruitment strategy because the Arts Faculty discontinued the degree."

University of Glasgow: Tech-supported learning environments. Humanities - Scottish History

This case discusses the adoption of a Moodle VLE for a level 1 and three Honours level Scottish History courses. Previously the courses either used a basic Dreamweaver website or had no internet-based support. The course Moodle sites were used to supply information and resources to all students on and off campus and to encourage communication between students. Seminar groups were created in Moodle to allow tutors and students to email each other and a general chat function was created for the class at large. Administrative information, essay reading lists and past exam papers were provided at the top of the Moodle site. Other materials were provided in weekly sections so that students could see when each item came into play during the course, these included: Powerpoint/summaries of OHP presentations for lectures; Worksheets for seminars and workshops; digitised secondary reading for each seminar (when available); digitised annotated primary sources or links to sources on websites (when available). This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

X Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"In Scottish History Level 1, the introduction of e-learning coincided with an overhaul of the course, so the specific role of e-learning in improved results is impossible to quantify. Results have been transformed, however: the proportion of students who finished with an A grade overall leapt from 1% to 15%, while the number of 'fails' (less than D) fell from 12% to 5%."

There was limited training on offer for Moodle. The university offered voluntary training which one lecturer in Scottish History Level 1 took up but found of limited use as it was not discipline-specific. Others struggled to fit the courses into their schedules. Peer training proved most helpful: as one lecturer commented, "*My training, as the History member of staff involved in these courses, consisted of a couple of lunchtime sessions with members of the Celtic department showing me what to do. I found this quite straightforward, once I got the hang of it! I feel quite confident that, should I wish to expand into more advanced applications – I'm particularly interested in group work - I could get the necessary bite-sized training at my keyboard from one of my more advanced colleagues*."

University of Hull: Tech-supported learning environments. Humanities - MA in Legislative Studies Online (MALSO)

The MA in Legislative Studies Online (MALSO) is taught entirely online. It was created to respond to the needs of potential students: staff working in or with parliaments. Typically mature students located in dispersed places and with work and family commitments. Online teaching offered the flexibility of time and space for these students to undertake the course. MALSO stems from the MA in Legislative Studies which had proven of difficult access to many potential students. This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

Some comments from the course tutor:

"It allows time and flexibility of access to the course for both students and staff. One of the members of staff routinely travels between two cities. Teaching online allows him to fit teaching into his busy schedule."

"It allows improved student performance, as it recruits students with very high levels of academic ability, as well as providing the flexibility for students to fit course work around their own busy lives."

"MALSO has been a breakthrough in departmental policy, as there are only two MAs in the University of Hull that are taught entirely online."

University of Hull: Learning resources and activities. Humanities - The MEd in e-Learning programme

The MEd in e-Learning programme was designed to provide professionals from across the world with the opportunity to interact with others in a range of education and training contexts and roles through a wholly-online Masters programme. The intention was to ensure provision for individuals unable to travel to Hull and to develop provision which would deliberately not simply attempt to replicate classroom-based teaching but exploit the opportunities and added value which the VLE offered. Participants are encouraged to work independently and collaboratively as they explore core issues involved in the design, development and implementation of e-learning with specific focus and emphasis placed on their professional working context.This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

Some comments from students on the course:

"During the course we were always encouraged to relate the learning to our work environment and I found the content helped me become more effective in my professional capacity."

"Having access to professionals from other areas of education, with all the experience, know-how and information that they bring to the course not only makes the course interesting but gives me insights into my own ways of working."

A comment from the course tutor: *"The External Examiner for the programme has highlighted the particular benefits students derive from the inclusion of collaborative assessment tasks, and noted the positive impact on their achievement. The use of the Merlin Portfolio, increasingly in combination with external, largely Web 2.0, tools, facilitates and enhances the collaboration which is possible on the programme and ensures both secure submission of joint work, and provision for access to the complete moderation process, for programme staff and External Examiners, all within the same online environment."*

University of Hull: Tech-supported learning environments. Humanities - Westminster Hull Internship Programme (WHIP)

E-learning was used to enhance the link between the department and students away from the University on internships with MPs at Westminster. This was achieved by using Merlin, the University of Hull's award-winning virtual learning environment. Although the students are on placement they are still registered with the University and have to participate in assessed modules, which is credited as part of their degree. Merlin therefore had to be able to provide students with the same level of support and information as on-campus students at the University. It also had to be simple and straightforward to use as well as capable of information exchange and anonymous assessment submission. This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

XInfluence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

Some comments from the course tutor:

"The academic staff involved in WHIP are more satisfied with the organization and performance of the scheme since Merlin's arrival, which has encouraged the use of the VLE for future online teaching within the department."

"E-learning has had a significant impact on the continued reputation of the department as well as our ability to attract and maintain ever increasing student numbers."

Leeds Metropolitan University: Tech-supported learning environments. Economics, business and finance – Case study

The case study describes the development of e-learning resources, to be use in a blended environment, to aid teaching on a level 2 module in Hypermedia Authoring Systems. The approach used Dreamweaver as the standard toolset provided by the VLE and was deemed to be inadequate for the purpose. The aim was to develop students' understanding of the relationship between theory and practice within the module, and to generally increase student motivation and attendance at lectures. Reported benefits include a general improvement in student engagement as evidenced by student module evaluation feedback. The approach taken required considerable effort on the part of the Lecturer concerned.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

☐ Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

☐ Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"I liked the fact that the module enables students to understand and learn how to create animation for websites as well as the theory behind it" [student comment]

"I have been very enthusiastic and my interest in teaching pedagogy was reawakened as I first got to grips with e-learning and began to integrate it into my teaching."

Leeds Metropolitan University: e-Assessment. Economics, business and finance - Use of summative computer assisted assessment in semester one of level one

The case study describes the implementation of e-assessment for 350 students on the Applied Technology and Finance first year module. The approach used standard tools available within the institutional VLE. The aim was to reduce staff time and improve the speed of feedback to the students. Reported benefits include significant resource savings and an improvement in the average student mark. However, considerable up-front effort was required to achieve these results, and the break-even period appears to be around three years.

This case study illustrates:

☐ Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

☐ Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"Marks for all 350 students were submitted within three hours of the completion of the exam…In previous years … the process could easily take 120 hours."

"This approach works best in modules with large numbers of students where the initial outlay of time and effort will have a bigger pay off at a later date."

Newcastle University: e-Portfolios in medicine. Health – Case study

This case study outlines the implementation and use, since 2003, of a flexible e-portfolio tool to support healthcare students. It is embedded in the medical programme (including assessed) and has been taken up by many other institutions. E-portfolios were developed as a method to help foster a reflective approach to evidencing the achievement of both module-specific and programme learning outcomes in line with General Medical Council guidelines, QAA requirements and the university's e-learning strategy. The tangible benefits to students include support for their professional development, linkages with employment, skills development; and for the institution, transparency of support for students who may be learning at distance from the medical school, and new ways of teaching.

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

☐ Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Recruitment (e.g. students or staff; accessibility; new markets)

☐ Retention (e.g. students or staff)

X Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on social justice agenda such as WP or accessibility

Sound bites

"The e-portfolio implemented for Medicine includes support for a range of different pedagogy for different purposes within the curriculum…"

"…the initial evaluation of the e-portfolio process for SSMs 80% of students found it to be a useful learning experience and 72% said it influenced their approach to learning; 93% said it led them to reflect following the end of the placement."

"There have been significant benefits to the wider institution where the flexible nature of the e-portfolio has meant that it could be applied to support other curricula and a broad range of educational requirements [such as] postgraduate research students."

"…the e-portfolio is used at 11 other institutions and has been adapted in a number of JISC projects to develop support for interoperability and the transfer of life-long learning records."

Newcastle University: Tech-supported learning environments. Health - Use of a VLE to deliver a 'regional' medical school

This case study outlines a Learning Support Environment in medicine whereby students can access all of the materials needed to support them in their course, linked to the programme outcomes, no matter where they are located in the region. In some cases this is administrative (access to detailed exam result information), in others pedagogic (teaching materials and links to relevant evidence), and in terms of support (communication tools). The tangible benefits include very high rates of student satisfaction (as measured in the NSS – Newcastle is one of the top places to study medicine), transparency for students and staff, ready access to support.

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Recruitment (e.g. students or staff; accessibility; new markets)

X Retention (e.g. students or staff)

X Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on social justice agenda such as WP or accessibility

Sound bites:

"*Student learning has been greatly supported by the introduction of the LSE. All learning resources are uploaded, allowing students to access the content 24/7 from any computer connected to the internet. By providing access to resources in the framework of the 'course structure' guides, students have huge scope for independent learning: they can visualise the numerous strands running throughout the course and prepare/study accordingly.****"***

"*As part of the degree programme evaluation, the LSE consistently receives extremely high feedback: 80-90% of students have rated it highly.****"***

"*The tutee information available on the LSE allows tutors to track their students progress and pre-empt any problems that may present. Ultimately, this will improve retention rates as students will get the necessary support.****"***

University of Nottingham: e-Assessment. Health - Disability support in computer-based assessment

This case study describes steps taken to enhance an online assessment system TouchStone to accommodate various forms of disabilities which would not be possible to accommodate in any other way. Being able to pass exams is critical to progression through all degrees, but failure to adequately address potentially discriminating features of an assessment can result in students with certain forms of disabilities being unfairly disadvantaged. The tangible benefits include: compliance with relevant legislation; directly supporting students who take advantage of the features; placing control for visual formatting under the control of a student and the disability support unit; and wider understanding of the need to design learning around inclusivity at all stages, and what reasonable adjustments can be made with technology.

- ☐ Effect on learning (e.g. context, style, insight and reflective practice)
- X Effect on exam results
- ☐ Effect on students' personal development (e.g. skills, employability, confidence)
- X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)
- X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)
- X Influence on educational research
- ☐ Staff satisfaction with e-learning
- X Effect on staff personal development (e.g. skills, employability, confidence)
- X Recruitment (e.g. students or staff; accessibility; new markets)
- X Retention (e.g. students or staff)
- X Influence on policy (e.g. institutional, departmental)
- X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)
- X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)
- X Effect on management of learning assets (e.g. institutional IP, repositories)
- X Effect on social justice agenda such as WP or accessibility

University of Nottingham: e-Assessment. Health - Moving from OMR to CBA for summative exams

This case study outlines a move by the University of Nottingham Medical School from optical mark recognition (OMR) method of scoring objectively marked questions to a computer-based assessment (CBA) solution because of time pressures of marking increasing cohort sizes and a desire to create more realistic/high quality questions. Teaching staff wished to incorporate full colour microscope slides and high resolution radiographs which are difficult and expensive to accurately reproduce on paper. There are numerous benefits ranging from saving time, resources (paper and staff time), almost immediate feedback to students and the potential for practice.

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Recruitment (e.g. students or staff; accessibility; new markets)

X Retention (e.g. students or staff)

X Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on social justice agenda such as WP or accessibility

Sound bites:

"Another advantage is that there is now a single place of storage for questions, past papers, student profiles (year of study, photo etc and marks) and exam results and that these are interconnected: e.g. a student profile links to the papers that student has taken and this can in turn link to the marks for a cohort on that paper."

"This has meant that one exam could be brought forward by one week this year and therefore provided more time to review marks has been created. A great deal of paper has also been saved with the move away from OMR."

Sheffield Hallam University: e-Portfolios. Humanities – Case study

Evidence from an internal research project indicated a variable level of engagement of students with personal/academic development planning (PDP) in the first year of their study on a large, social science degree programme. Issues were also identified in relation to course identity, tutor-student relationships and meaningful, timely feedback on work. In this context, e-portfolio was introduced as a vehicle for integrating first-year learning, providing regular feedback on progress and functioning as the focus for PDP at all three levels of the degree programme. Early research findings are that the introduction of e-portfolio has been a success: the provision of ongoing feedback to students has reduced the burden of end-loaded marking; staff buy-in to the tool is enhancing interaction with, and between; students; PDP is moving from a 'bolt-on' to an embedded aspect of course design; electronic PDP submission and feedback to students has reduced the costs of these processes; and - most importantly - student engagement with PDP has improved.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

Typical student comments on the use of PebblePAD e-portfolio:

'You can use PebblePAD to interact better.'

'It has spurred us on to do more group work. We share PebblePAD and it has, since then, made us ask each other to look at work.'

Sheffield Hallam University: Learning resources and activities. Humanities - Drug use in context

The use of e learning has allowed me to produce a range of material available to the students on a 24/7 basis. The nature of the module *Drug use in Context* allows a range of teaching material to be used. The use of a dedicated website, paperless module outline, and the Blackboard learning environment alongside email contact and information alerts provide a robust and flexible format for the student and a rewarding and continuously updating module for the tutor. This case study outlines the progressive development of one module and the interventions made by the tutor team to introduce authentic cultural material in a real-world context. For this and similar ongoing contemporary modules e-learning is essential to keep the learning experience for the students at the cutting edge. It offers far more advantages than disadvantages and allows the *work smarter* approach to flourish. In addition, it provides greater work satisfaction by using the most up to date sources and delivery methods. The student response is clear as they understand that the technology is allowing them to have a better learning experience and that they can produce work which equals their efforts.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

X Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

The module co-tutor comments: ' *... initially being unfamiliar in using e-learning, I now find it is second nature to put material on the VLE and I can really see the benefits of this approach*'

One student comments in the module evaluation: '... what I have found in this module is the level of support available and the knowledge and enthusiasm that shine through'.

Sheffield Hallam University: Learning resources and activities. Humanities – Use of Video

At Masters level, students from varied backgrounds and disciplines often struggled with the epistemological basis of qualitative research and with concerns about the reality of conducting research. Several video case studies have been made available to these students and used in teaching as a resource to illustrate and highlight the problems faced in: developing case study approaches; conducting interviews; using video for ethnographic research; and ensuring greater validity and ethical consideration during fieldwork. The resource is flexible and can be utilised for a variety of teaching and learning contexts. This integrated approach to teaching and research has tangible benefits for both students and lecturers who gain confidence and increase their active research profile as a result. Furthermore, this is potentially an approach which can take up ethical issues of social justice and broaden the University's reach to a range of local and international communities.

This case study illustrates:

x Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

x Effect on student personal development (e.g. skills, employability, confidence)

x Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

x Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

x Influence on educational research

x Staff satisfaction with e-learning

x Effect on staff personal development (e.g. skills, employability, confidence)

x Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

x Influence on retention (e.g. students or staff)

☐ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

x Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"I found the use of visual material within the class very useful as it frames the research well and gives context which can only allow for a greater understanding and a step, for the researcher, towards that in which it seeks to understand/explore and gain insight into. For pupils wishing to gain an understanding of qualitative research this is an excellent way to teach, the research becomes real and as a student with qualitative research interests visuals like those used by yourself, only gain your attention, and most definitely, your excitement."

"Sometimes I find it easier to retain information on a topic if I have a visual memory of it. Also, I believe the visual representation of a topic can provoke an emotional response within an individual which in turn helps them connect with the subject and stimulate interest. I am very much in favour of video/ visual methods within teaching, and I think it should be used more frequently."

Swansea University: Tech-supported learning environments. Humanities - The Learning Lab

The case study discusses the initiative of e-learning staff at Swansea University to create a space with useful resources about e-learning for all staff. This was in the form of a simple website called 'The Learning Lab' (http://learninglab.swan.ac.uk/) which provided a number of documents and information, including the University's e-learning strategy, guidelines for e-learning, and general descriptions of what e-learning is and the tools available such as wikis, blogs, and podcasts. The initiative is further supported by regular meetings of interested academics. This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

☐ Effect on student personal development (e.g. skills, employability, confidence)

☐ Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

"As we are attempting to put as few barriers as possible in the way for staff who want to experiment with e-learning, there is limited authentication required for the communicative areas of the website. Whilst this was done to encourage those with less confidence in using IT to take part, it has also encouraged spammers into the discussion board!"

"A good community is all about people, in our online presence we facilitate ways in which people can connect with each other, share and collaborate. However, we are very aware that social elements are important to communities, and facilitate occasions where people can get together and talk in an informal environment. We hold regular "e-learning and cakes" gatherings where people can meet face to face to discuss topics of interest related to e-learning in an informal environment (and there is cake!). These sessions were originally attended by learning technologists but have now expanded to included academics from a wide range of departments, librarians, staff development staff and IT support staff."

Swansea University: Tech-supported learning environments. Humanities - Collaborative teaching and video-conferencing

The case study discussed a collaborative teaching and video-conferencing effort organized by Swansea University. The project enabled three programs of study in three different institutions: the Swansea University's MA in Ancient History and Classical Culture, the University of Wales Lampeter's MA in Ancient History, and the Cardiff University's MA in Ancient History to benefit from shared video-conferencing events on program modules. The video-conferencing facilities were provided by the University of Wales-Swansea and the Welsh Video Network (WVN) (http://www.wvn.ac.uk/). Access to the videos was available to students via the programs' VLE (Blackboard) together with other course material.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

X Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

Sound bites:

"There is the benefit of teaching as part of a wider team and sometimes colleagues from other institutions attend the seminar. I have found this beneficial for the Greek epigraphy module where we have been discussing complex texts and two academics can emphasise different aspects. Students seem to have enjoyed the dialogue aspect of the module especially when they see staff members explaining difficult issues, for example possible reconstructions of damaged texts. They can also observe how academics handle scholarly disagreement in a gracious and friendly manner. (The nature of the videonetwork encourages politeness.)"

"There are clear cost-saving benefits. An institution might not be able to employ four epigraphists to contribute to a single module - but across three institutions there can be experts in the field of (say, taking areas from the current grouping) 5th century Attic, late classical Greek, Roman provincial Latin, and Greek from the eastern provinces. It encourages staff to think about their dress sense."

Swansea University: Learning resources and activities. Humanities - Podcasting

This case study discusses the incorporation of podcasting in the teaching of a level 1 module on the course 'Archaeology of the Greek World' taught at the Department of Classics, Ancient History and Egyptology, Swansea University. It helps first year students who have not visited the archaeological sites concerned to visualize the areas concerned. The podcasts were combinations of audio recordings and digital photos combined into video files. They included discussions of Kerameikos (ancient) cemetery in Athens, Arsinoe (Methana) and Rhamnous (Attica). The podcasts were then uploaded onto Blackboard, iTunes and a commercial server, accessible to students either on campus or off campus.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

X Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

Students have been responding to staff podcasts with the creation of their own pieces. An example, drawn from a level 2 Egyptology module where the students were working on an object from the university's Egypt Centre as part of their continuous assessment was posted on Youtube: http://www.youtube.com/watch?v=NDcFeECBKeI

Students with mobility difficulties could find it hard to gain access to some archaeological sites in Greece (though there is now a lift to the Athenian akropolis). Podcasts could provide them with visual access to sites which they may otherwise be unable to visit.

University of Warwick: Learning resources and activities. Health - Case study

This case study explores practical solutions to the challenge of developing staff skills for the successful embedding of e-learning development in a HE Faculty. It reflects on lessons learnt during a project promoting the team-based approach to developing e-resources for a core postgraduate research module. The learning activities framework is a work in progress and research into the influence on development and innovation will continue, resource permitting.

This case study illustrates:

☑ Effect on learning (e.g. context, style, insight and reflective practice)

☒ Effect on exam results

☑ Effect on student personal development (e.g. skills, employability, confidence)

☑ Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

☑ Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☑ Influence on educational research

☑ Staff satisfaction with e-learning

☑ Effect on staff personal development (e.g. skills, employability, confidence)

☑ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☑ Influence on retention (e.g. students or staff)

☑ Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☑ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☑ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☑ Effect on management of learning assets (e.g. institutional IP, repositories)

☒ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

University of Warwick: e-Assessment. Health – Case study

In Warwick Medical School (WMS), we have adopted an assessment blueprinting approach to help match learning outcomes and competencies against examination question items. In Phase I of the WMS undergraduate medical course, students are assessed at the end of each semester by written answer exams and objective structured clinical examination (OSCE). In the written exams, integrated questions are coded against General Medical Council (GMC) competency themes. Students receive feedback on their written exam performance that guides them to plan learning strategies to help attain GMC competencies.

This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

☐ Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

☐ Staff satisfaction with e-learning

☐ Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

☐ Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

☐ Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study:

“In WMS we wanted to develop an assessment feedback system that gave students insight into their exam performance”

“The change in assessment procedures has influenced departmental policy

University of Wolverhampton: e-Portfolios. Humanities - e-Portfolios and blogging

The case study discussed the impact of e-portfolios on learning in the case of teacher education at the University of Wolverhampton. An e-portfolio system (pebblePAD) was used mainly with PGCE students, and a group of PGCE mentors undertaking a PGCert in Mentoring. A previously-conducted scoping study argued for a research methodology that was capable of capturing the affective, social and conative aspects of the student experience, in contrast to the conventional focus on the cognitive. Two major gaps in data collection methodologies were identified: a) stories or narratives that capture the diversity of how students use learning technologies in their formal studies and b) attempts to elicit beliefs and intentions. The study proposed that ideally a methodology capable of filling these gaps should display at least some of the following characteristics. It should: be 'naturalistic' (focusing on informal as well as formal learning); capture the complexity and authenticity of case studies; sample purposefully (choosing learners who are characterised by behaviours or qualities of particular relevance); focus on typical e-learning contexts rather than on specific types of activity; employ semi-structured interview schedules and the study proposed a method termed 'interview plus', where the 'plus' represents some artefact or activity chosen to guide recall or aid thinking aloud. This case study illustrates:

X Effect on learning (e.g. context, style, insight and reflective practice)

X Effect on exam results

X Effect on student personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

X Influence on educational research

X Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

☐ Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

☐ Influence on retention (e.g. students or staff)

X Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

☐ Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

x Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

☐ Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

+ 2 sound bites from the case study: "*Using the web log as an online journal became a big part of our growth as reflective writers. Using the blog tool within the e-portfolio we could share thoughts, feelings, fears, anxieties and excitement and because it was a shared space we could see the value in the perception of thoughts and beliefs of others in the group. It was a space where we could feel safe from ridicule and criticism. We would share war stories from the frontlines of teaching and by discussing and commenting on each other's journeys as teachers we were becoming reflective writers and practitioners without even knowing it!"*

"The flexibility of the e-portfolio meant that we had the luxury of time for our reflections. Activities, such as creating metaphors of teaching, discussing poetry, images and music to prompt reflection, that are usually confined to the restraints of a traditional classroom could be uploaded to pebblePAD. There was no pressure to answer/talk back immediately; you had time to think and then respond and everyone had the opportunity to comment, something that can rarely happen in a classroom environment."

University of Wolverhampton: e-Portfolios. Health - The use of e-Portfolios to support nursing and midwifery

This detailed case study examines the use of a personal learning space offered by an e-portfolio system in two undergraduate programmes, nursing and midwifery, and is authored by two teachers: one responsible for a nursing programme ('family friendly programme') and the other responsible for a midwifery programme. The programmes have been run with widening access students for two years. The tangible benefits included evaluation evidence of student satisfaction, development of skills (employability) and clear links with constructivist models of learning delivered in a blended learning format. It is considered that programmes such as this would have a higher attrition rate if students were not able to readily communicate with one another.

X Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

X Effect on students' personal development (e.g. skills, employability, confidence)

X Student satisfaction with e-learning (e.g. effect on motivation, attendance/enjoyment; in NSS, institutional survey, module evaluation, focus groups, etc.)

X Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

☐ Influence on educational research

☐ Staff satisfaction with e-learning

X Effect on staff personal development (e.g. skills, employability, confidence)

X Recruitment (e.g. students or staff; accessibility; new markets)

☐ Retention (e.g. students or staff)

X Influence on policy (e.g. institutional, departmental)

X Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

X Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

X Effect on management of learning assets (e.g. institutional IP, repositories)

X Effect on social justice agenda such as WP or accessibility

Sound bites:

"Peer support was a feature in the online environment."

"Having access to pebble pad and being able to "keep in touch" helped me immensely. On more than one occasion during placement I have had to question myself, my views and beliefs and without the aide of pebble pad and being able to share things with you all I would I may have joined others from our community and quit!"

"…for some of the group e-portfolio has given them immense confidence. By sharing ideas and group problem solving the family friendly students appear to be miles ahead of our full time route students in terms of their development."

University of Wolverhampton: Tech-supported learning environments. Humanities - Religions in Wolverhampton

This case study explores the development of an introductory module in an introductory optional course on Religious Studies at the School of Humanities, Languages and Social Sciences, University of Wolverhampton. A website with the title *Religions in Wolverhampton* was created (using technology from the Wolverhampton Online Learning Framework –WOLF to support student learning in the form of a virtual tour to significant places of worship in the city of Wolverhampton. Significant pedagogical devices included the incorporation of game theory in the form of WebQuests and Treasure hunts. Particular electronic resources included a sound glossary, virtual tours of places of worship, video clips of main prayers/ reading from scripture, video clips of explanations and to be a portal for Wolverhampton Inter-Faith Group publications.

This case study illustrates:

x Effect on learning (e.g. context, style, insight and reflective practice)

☐ Effect on exam results

x Effect on student personal development (e.g. skills, employability, confidence)

x Student satisfaction with e-learning (e.g. effect on motivation, attendance and enjoyment, as shown in national survey, institutional survey, module evaluation, focus groups, or other)

x Innovation in teaching, learning and assessment (e.g. stimulus to creative approaches)

x Influence on educational research

x Staff satisfaction with e-learning

x Effect on staff personal development (e.g. skills, employability, confidence)

x Influence on recruitment (students or staff; e.g. through greater accessibility; opening up new markets)

x Influence on retention (e.g. students or staff)

x Influence on policy (e.g. institutional, faculty/school, departmental, or other extra-institutional body)

x Effect on resources (e.g. effect on cost of delivery, time, applying full economic costing to teaching and learning)

x Modifications to learning spaces (e.g. libraries, wireless networks, informal learning spaces)

x Effect on management of learning assets (e.g. institutional IP, repositories)

x Effect on a social justice agenda (e.g. widening participation, provision of space for consideration of differing or challenging perspectives)

The theoretical foundation for this approach is based on the work of Biggs, 2003, who identified metacognitive skills as a third level of skills, which goes beyond generic and study skills. Metacognitive skills are in essence involved with what a 'what learner does in new context.' (2003, 94)Thus, the provision of electronic resources allowed students to interact with each religion, to learn facts, figures, and practical issues such as pronunciation of key terms through the sound glossary. In addition, e-learning supported interaction with the wider community, and thus contributed to community cohesion. The website was used as a portal to provide access to publications by the Wolverhampton Inter-Faith Group and local community websites. Ongoing work by students in the module contributes to this process through the posting of their reports on visits to local communities in the website. One strand of reporting contributes to social justice by exploring the experience of congregants and their interaction with other communities.

Appendix 2: CAMEL Tangible Benefits of e-Learning Breakdown of Results

Top Responses Overall

Overall Position		Total No No out of 37	Total % %	Econ/Bus/Fin Cluster No out of 9	Econ/Bus/Fin Cluster %	Health Cluster No out of 12	Health Cluster %	Humanities Cluster No out of 16	Humanities Cluster %
1=	**Effect on Learning**	31	84	6	67	9	75	16	100
1=	**Innovation in T,L & A**	31	84	6	67	10	83	15	94
2	**Student Satisfaction**	30	81	7	78	10	83	13	81
3=	**Student Personal dev**	29	78	5	56	10	83	14	88
3=	**Staff Satisfaction**	29	78	5	56	8	67	16	100
4	**Resources**	25	68	4	44	11	92	10	63
5=	**Staff Personal Dev**	23	62	3	33	9	75	11	69
5=	**Policy**	23	62	1	11	10	83	12	75
6	**Social Justice**	19	51	2	22	7	58	10	63
7	**Recruitment**	18	49	3	33	7	58	8	50
8=	**Influence on Educational Research**	17	46	1	11	8	67	8	50
8=	**Retention**	17	46	3	33	6	50	8	50
8=	**Modifications**	17	46	0	0	8	67	9	56
8=	**Management**	17	46	1	11	10	83	6	38
9	**Effect on Exam Results**	16	43	4	44	5	42	7	44

Top responses for Economics/Business/Finance Cluster

		Econ/Bus/Fin Cluster No/9	Econ/Bus/Fin Cluster %
1	**Student Satisfaction**	7	78
2=	**Effect on Learning**	6	67
2=	**Innovation in T,L & A**	6	67
3=	**Student Personal dev**	5	56
3=	**Staff Satisfaction**	5	56
4=	**Resources**	4	44
4=	**Effect on Exam Results**	4	44
5=	**Staff Personal Dev**	3	33
5=	**Recruitment**	3	33
5=	**Retention**	3	33
6	**Social Justice**	2	22
7=	**Policy**	1	11
7=	**Influence on Educational Research**	1	11
7=	**Management**	1	11
8	**Modifications**	0	0

Top responses for Health

		Health Cluster No/12	Health Cluster %
1	**Resources**	11	92
2=	**Innovation in T,L & A**	10	83
2=	**Student Satisfaction**	10	83
2=	**Student Personal dev**	10	83
2=	**Policy**	10	83
2=	**Management**	10	83
3=	**Effect on Learning**	9	75
3=	**Staff Personal Dev**	9	75
4=	**Staff Satisfaction**	8	67
4=	**Influence on Educational Research**	8	67
4=	**Modifications**	8	67
5=	**Social Justice**	7	58
5=	**Recruitment**	7	58
6=	**Retention**	6	50
7	**Effect on Exam Results**	5	42

Top responses for Humanities

		Humanities Cluster No/16	Humanities Cluster %
1=	**Effect on Learning**	16	100
1=	**Staff Satisfaction**	16	100
2	**Innovation in T,L & A**	15	94
3	**Student Personal dev**	14	88
4	**Student Satisfaction**	13	81
5	**Policy**	12	75
6	**Staff Personal Dev**	11	69
7=	**Resources**	10	63
7=	**Social Justice**	10	63
8	**Modifications**	9	56
9=	**Recruitment**	8	50
9=	**Influence on Educational Research**	8	50
9=	**Retention**	8	50
10	**Effect on Exam Results**	7	44
11	**Management**	6	38

All 3 cluster groups had **Innovations in T, L and A** as 2nd, although it was 2nd equal with other issues for Econ/Bus/Finance and Health
Student Satisfaction and Student Personal Development score highly for all three clusters, with the Economics Business and Finance cluster having Student Satisfaction at the top of their list – **Staff Satisfaction** scores more highly for Humanities.
Effect on Exam results has a similar percentage response for all three clusters – 42-44%
Interestingly, **Management** is at the bottom of the list for Humanities but is =2 issue for Health and a more modest =7th for Economics/Business and Finance Cluster.

Appendix 3: Mapping of Case Studies to e-Learning Benefits Model