

You take the high road: national programmes for the development of e-learning in Higher Education.

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ABSTRACT

The central question addressed by this paper is the effect of national initiatives in e-learning within the Higher Education sector. Two national programmes for the promotion of e-learning in UK higher education are described, and some tentative lessons are drawn from their comparison. One is the English Benchmarking and Pathfinder programme, still ongoing, in which £8M has been distributed widely across over 70 HE institutions, and the other is the £6M Scottish e-learning transformation programme, involving six large-scale collaborative projects. The scale of these two programmes is comparable to the Pew Grant programme in course redesign in USA higher education, which claimed both improved learning and reduced costs through the introduction of technology enhancements. This paper considers how these claims influenced the UK initiatives, and how divergent strategic considerations led the national programmes to be defined differently. A conclusion is that the way the initiatives were framed has influenced their outcomes. However, both programmes have succeeded in building a cross-institutional level of capacity development that offers a policy direction for the future.

INTRODUCTION

This paper addresses a key issue for Higher Education policy: the effects of national funding initiatives designed to impact on the development of e-learning. Although examples of such initiatives stretch back over more than 15 years, we choose here to consider recent e-learning programmes that have been aimed more explicitly at the transformation of the student experience. The approach of earlier initiatives was confounded by the need to stabilise access to an enabling technology, whereas the programmes examined here have focused on the ways in which the existing (and almost universal) technical infrastructure can bring benefits both to the institution, through greater efficiency, and to the student, through an enhanced learning experience.

Two national programmes for the promotion of e-learning at the sectoral level in UK higher education are considered, and a comparison is made with the Pew Grant programme in course redesign in USA higher education, which claimed both improved learning and reduced costs through the introduction of technology enhancements. The two UK initiatives are the Higher Education Funding Council for England (HEFCE)-funded Benchmarking and Pathfinder programme, still ongoing, in which £8M has been distributed widely across over 70 HE institutions, and the £6M Scottish e-learning transformation programme, involving six large-scale collaborative projects. The overall scale of all three programmes is closely comparable. A crucial issue for both the UK programmes is the sustainability of the

enhancements achieved through the projects, and the success of this outcome will not be apparent for some time. Nevertheless, a snapshot of the characteristics of the two programmes may allow us, even at this stage, to draw some conclusions, both about the directions in which e-learning in higher education is currently developing, and about the role of national programmes in its development.

THE PEW GRANT PROGRAMME

The Pew Grant Program in Course Redesign in US higher education¹, conducted from 1999 to 2003, attempted to demonstrate how colleges and universities can redesign their teaching approaches using technology to achieve cost savings as well as quality enhancements. The redesign projects focused on large-enrolment, introductory courses, which have the potential of impacting on significant student numbers and generating substantial cost savings. The Pew Grant programme duly demonstrated evidence of savings without a decline in assessed levels of achievement, and in some cases succeeded in demonstrating real improvements in student learning.

Twigg (2003) discusses five distinct course-redesign models. The *supplemental* model retains the basic structure and pedagogy of the traditional course, but adds computer-based activity as an additional component. The *replacement* model typically involves a reduction in face-to-face class meeting time accompanied by an increase in online activity; in some cases the face-to-face activity is redesigned as well. The *emporium* model eliminates all class meetings and replaces them with an open-access learning resource centre, where on-demand personal help is permanently available. It is particularly interesting to note, however, that this help is not to be thought of as tutoring. “Emporium helpers do not answer students’ questions, but rather direct students to resources from which they can learn”. The burden of tutoring falls on the courseware, the “interactive tutorials, computational exercises, hypertextbooks, practice exercises, solutions to frequently asked questions, and online quizzes”. It is not surprising, perhaps, to realise that the courses redesigned in this way in the Pew Grant programme are all teaching mathematics, the subject area that has always been that most amenable to the ‘computer as tutor’ (Anderson, et al. 1995). Even so, it should be noted that in two of the three emporium redesigns mandatory attendance in the emporium, and at group meetings, have been introduced to ensure that students spend sufficient time on task. The *fully online* model in the Pew programme has taken the disaggregation of the teaching and support functions further than in other models, restricting academic staff to a smaller proportion of the total interactions with learners. The most ambitious model, not really tested in the Pew programme, is the *buffet model*, where a whole range of activities and different forms of courseware are on offer, in principle offering the capability of matching particular learning tasks and particular media to the requirements of individual learners. The Pew programme did not succeed in addressing the key question of how the matching can be achieved without increasing resources, other than by offering a wholly-unconvincing learning styles test (Coffield, et al. 2004).

¹ <http://www.center.rpi.edu/PCR.htm>

Looking at the Pew course redesign programme overall a number of key points emerge, obscured perhaps by the implication in the overly-simple conclusion that introducing e-learning leads to improved learning and decreased costs. First, the institutions entering this programme had already overcome the main barriers to change in the desired direction: the organisational, procedural and attitudinal resistance to a radical redesign of large-class teaching. Much of the activity in the UK programmes is focused on a stage that *precedes* course redesign: gaining the support and understanding of managers, teaching staff and quality administrators about the needed direction of pedagogical change. In short, benchmarking/Pathfinder can be viewed as building the capacity to produce the kind of proposals that Pew Grant funded. Second, the main characteristic of the pedagogical redesign in most of the Pew institutions is a move towards a more activity-focussed pedagogy, usually involving an increase in formative assessment. The research evidence would support the idea that such change will lead to significant gains in learning whatever the methods or tools used to achieve it (Mayes and de Freitas 2004). Thirdly, the cost reductions have in large part been achieved through reducing the amount of time that academic staff spend in direct interactions with students. The claim here is that without the technology this would be not be possible, yet the burden of interaction time is taken less by software (tutorial software, automated feedback, support for peer and group discussion) and more by employing graduate and peer undergraduate teaching assistants to be responsible for contact time that would previously have been undertaken by academic staff.

THE POLICY CONTEXT FOR E-LEARNING DEVELOPMENT IN THE UK

Since 1999, devolution in the UK has led increasingly to divergent policies across the agencies that separately fund English, Scottish, Welsh and Northern Irish higher education. We now see differences emerging in national higher education policies, particularly between Scotland and the rest of the UK, in terms of the policy framework, structures, initiatives, aspects of practice, and patterns of participation (Gallacher 2008). This divergence is beginning to be seen in the field of e-learning where two large scale development programmes, one in England and one in Scotland, have been implemented in interestingly different ways. The English funding council (HEFCE) has provided around £8m for a three year programme in two stages: a benchmarking phase² followed by a large number of ‘pathfinder’ development projects³. Some 77 higher education institutions are benefiting directly from one or more of these stages. In contrast, the Scottish Funding Council (SFC) decided in 2005 to fund six large scale collaborative projects⁴, where institutions were encouraged to join together to pursue a common £1m project over two years.

The policy background for the two programmes is complex, each funding regime beginning to interpret higher education policy within an increasingly different set of political aspirations. All, however, have to take account of a comparatively long period of disappointing returns from central funding targeted specifically at the development of

² See <http://www.elearning.heacademy.ac.uk/weblogs/benchmarking>

³ See <http://www.elearning.heacademy.ac.uk/weblogs/pathfinder>

⁴ See http://www.jisc.ac.uk/whatwedo/programmes/elearning_sfc.aspx

technology-enhanced learning, in programmes such as the Teaching and Learning Technology Programme (TLTP). The lack of uptake for technology-enhancements at the level of the direct teaching of a course or module can be contrasted with the universal adoption by institutions of a UK-wide technical infrastructure through SuperJANET, and the near-universal adoption of institution-based Virtual Learning Environments (VLEs).

Both the UK programmes examined here have started from an acknowledgement that technology-driven solutions must serve the requirements of a learner-centred pedagogy, emphasising active, enquiry-based learning. The need to employ technology in order to achieve more flexible delivery has also been seen as a driver towards greater efficiency and access. However, for our purposes, two events can be singled out as particularly important in setting the immediate context for the programmes in question. First, the decision of HEFCE to invest significant funding in the development of the UK e-University, followed rapidly by the failure of this approach, inevitably represented a key influence on strategic thinking about e-learning. The subsequent ten year e-learning strategy published by HEFCE can be read as explicitly encouraging the acceptance at institutional level of the responsibility for driving the development of e-learning, and embedding it in mainstream delivery. Second, the decision by the then-merged funding councils for higher and further education in Scotland to encourage the adoption of approaches that would work across both sectors, and, in higher education at least, to encourage the institutions themselves to take the lead for the enhancement of quality. So both programmes acknowledged the importance of aligning e-learning enhancement with individual institutional strategy, based on the need to enhance quality through internal change. Nevertheless, the two programmes differed crucially in the way their goals were described. In England the emphasis was on 'embedding' e-learning, where as many participating institutions as possible were given the opportunity to base their developments on the outcomes of a benchmarking exercise. In Scotland, the programme was aimed at 'transformation', emphasising the impact of a small number of high-profile exemplar projects carried out by consortia of institutions, and explicitly referring to the Pew Grant measured enhancements as intended outcomes.

THE BENCHMARKING & PATHFINDER PROGRAMME

Benchmarking

The Benchmarking & Pathfinder Programme was launched by the UK Higher Education Academy in late 2005. The programme is led by the Academy in partnership with the JISC, although institutions eligible for Pathfinder must be funded through HEFCE. The benchmarking exercise provided institutions with an opportunity to have their future decision-making informed by undertaking a rigorous and recognised process of analysis and reflection of their e-learning provision, processes, and practice. Institutions could, optionally, choose to compare the outcomes of their benchmarking exercise with other institutions with which they had established a trust relationship. The associated Pathfinder initiative provided eligible institutions with an opportunity to undertake an enhancement/transformation project which was shaped by their earlier benchmarking exercise.

The benchmarking exercise was piloted during the first eight months of 2006. Two main phases of the exercise followed, ending in December 2007. In total 77 institutions have participated in the benchmarking of their e-learning provision. Although the HEFCE strategy at first assumed that a single benchmarking methodology would be adopted across the sector, allowing straightforward comparisons across institutions, there was a clear preference expressed by the institutions for some flexibility in method, and for the confidentiality of the results. In the event, five benchmarking methodologies were offered and supported through external consultancy across this exercise. These methods are described in detail on the benchmarking web site (Higher Education Academy benchmarking weblog 2007).

As the benchmarking exercise moved through successive stages, involving new cohorts of institutions, so the methodologies started to influence each other. An unexpected outcome of this exercise has been the creation of a scholarly community around e-learning benchmarking itself (Bacsich 2005). Nevertheless, a clear conclusion is that the very process of asking penetrating questions about e-learning in a systematic way is what is valued, rather than the characteristics of the detailed methods themselves. In particular, although the institutions have required ownership of their own exercise, many have acknowledged the value of participating in a sector-wide programme, with project management disciplines imposed by the programme. It is as though most institutions find it very challenging to undertake such a process entirely from within. Even acting within a nationally-coordinated programme, many institutions found that the data needed for informed judgements about the way in which e-learning provision is actually used in real learning and teaching at module level are very hard to pin down, and significant resources need to be devoted to collecting and aggregating the data. Indeed, the exercise has served to bring into focus for institutions the need to align their need for data about e-learning with their own quality procedures.

During the benchmarking programme the locus of greatest interest has moved gradually from the attempt to create a description of internal institutional provision, and rate its adequacy, to a focus on its use, and to a realisation that 'input' measures of e-learning may not correlate in any straightforward way with 'output' measures. Thus, providing course materials on a VLE may improve efficiency, but may have no impact at all on the quality of student learning outcomes. The main consequence of this shift in focus, reported by many benchmarking teams, is a more questioning and analytical stance on the nature and pedagogic purpose of the e-learning that is being developed.

Pathfinder

Only HEFCE-funded institutions that had taken part in the pilot phase of the benchmarking exercise were eligible for entry to the pilot phase of Pathfinder; nine institutions did so. Then, institutions that had taken part in the phase one of the benchmarking exercise were eligible for entry to phase one of Pathfinder. As a result, 28 further institutions are currently undertaking Pathfinder projects, making 37 in all.

The outcomes of an institution's benchmarking exercise remain confidential (unless the institution is confident enough to publish them). However, it is possible to deduce the

nature of the judgements made in benchmarking by observing the nature of the project based on them. Overall, the picture that emerges is of a sector still struggling to find a central role for e-learning as part of mainstream provision, and only now starting to come to grips with fundamental issues of e-pedagogy – the role to be played by technology in helping to achieve the intended learning outcomes. The strategic implications of e-learning for policies that have hitherto been developed without much awareness of it, for example, human resources, student services and estates policies, are now being addressed. The overriding impression given of the Pathfinder pilot projects is that they are all attempts to respond to the fact that - as the HEFCE e-learning strategy explicitly stated - institutions are still attempting to *normalise* e-learning. Most institutions are now starting the process of embedding a truly student-centred, enquiry or problem-based e-pedagogy at subject teaching level, and are now beginning to engage with the implications for institutional policy across the board. The pilots are all, in one way or another, trying to accelerate that process. The particular way in which a pilot is attempting to achieve this depends on a number of internal factors, such as positioning within the institution, degree of existing senior-manager engagement, support from schools/faculties, or the relationship to a research culture. There certainly is an innovative aspect to many of the projects, exploring Web 2.0 pedagogies in particular, but our overall characterisation of the programme is that it is indeed addressing the central strategic goal of embedding an ‘e-’ in mainstream learning and teaching. Nevertheless, the projects also reveal that there is some considerable way to go before the HEFCE measures of success – a set of indicators that show the extent to which technology enhancements have become part of mainstream operations – are fully achieved across the sector.

Most of the Pathfinder pilot projects can be regarded as in some sense raising awareness of e-learning in the course design process. While there is an acknowledgement of the importance of ensuring that e-learning is appropriately expressed in an institutional strategy, the focus has increasingly been on practical implementation of the strategy in the teaching of programmes. Most of the pilots involve an attempt to put in place, or strengthen, organisational links between a central unit (with a direct responsibility for pedagogy, and in most cases e-learning) and practitioners in the schools and teaching departments. In at least four of the pilot institutions, the project has trialled new methods for working directly with course teams across the institution.

Another way to describe the main themes of the pathfinder pilots is to say that they are focused on engagement and empowerment. However, the engagement and empowerment is of teaching staff, rather than of students. Dealing first with staff is seen by all the pilots as a necessary stage, since the level of understanding of e-pedagogy (or, rather, pedagogy) by practitioners is one of the key variables that ultimately shape the student experience. However, there are pockets of activity emerging in several pilots that are just beginning to explore the issue of student empowerment (acknowledging the importance of the digital knowledge creation and social networking expertise that some students are increasingly bringing with them into higher education). In general, though, it is possible to conclude from the pilots that the issue of raising the skill and knowledge level of *students* about ICT for learning is only slowly emerging as a priority.

THE SCOTTISH E-LEARNING TRANSFORMATION PROGRAMME

At first sight the SFC approach seems less inclusive than the HEFCE programme, concentrating funding in only six large-scale projects, though when one looks at the number of institutions involved in at least one project and considers that as a proportion of the total number of institutions in the sector, then the contrast with the Higher Education Academy's approach seems less obvious. The six e-learning transformation projects in the Scottish programme can be thought of as six mini-development programmes for the sector. Each has involved a number of institutions coming together to pursue learning and teaching enhancement, and in some cases strategic change, driven by e-learning. Each project has been required to demonstrate how its innovation would generalise to other institutions, and in the case of three of the projects, how that generalisation would extend across the Higher Education/Further Education boundary.

The programme was funded in response to the 2003 report of the SFC's e-learning working group, which highlighted the importance of developing e-learning within a planned process of organisational development (SFEFC-SHEFC 2004). This model of transformation contrasts with ongoing processes of incremental institutional change, and involves e-learning substituting for (and not simply enhancing) conventional delivery methods. In asking for transformational change through e-learning the SFC indicated their belief that there would be most scope for productivity gains where institutions were prepared to use content developed externally (or collaboratively), where there was clear scope for substitution of capital or labour, where the required skills or training were in place, and where there were effective partnerships between academics and service departments.

The SFC noted that the Pew Grant outcomes were most encouraging in a policy environment where relating impact to particular interventions is "often seen as challenging or even impossible" (Harvey 2006). Nevertheless, we will argue below that it is almost certainly significant that the Pew Grant institutions were *selected* largely on the basis of their readiness to achieve the goals of the programme.

The Scottish transformation projects cluster into two main groups. The first group offered transformation through a pedagogy that focused on directly empowering students, with e-learning being employed in a variety of ways that gave the individual student more control over their learning. The second offered it through collaboration in the creation and delivery of resources. The pedagogy group comprised TESEP (Transforming and Enhancing the Student Experience through Pedagogy), REAP (Re-engineering Assessment Practices), and ISLE (Individualised Support for Learning through e-Portfolios). The resources group comprised CeLLS (Collaborative e-Learning in the Life Sciences), BlendEd (Collaborative Transformation of Course Delivery), and the e-Construction Transformation project.

Both TESEP⁵ and REAP⁶ had a similar goal: the enhancement of learning through giving students a more active role in the design of their own learning activities. REAP looked quite like a Pew grant project, where course redesign focused on large first year classes.

⁵ <http://www2.napier.ac.uk/transform/>

⁶ <http://www.reap.ac.uk>

All three of these pedagogy projects depended on transformation of the fundamental model of ‘delivery’ by empowering students to play an active role as co-creators (TESEP) and co-assessors (REAP) and co-planners (ISLE⁷) of their developing knowledge. Such a departure from a delivery pedagogy does not map particularly closely to any of the Pew models, partly because the way in which technology is deployed is no longer entirely under the control of the teachers. If anything, it resembles the buffet model, not fully tested in the Pew Grant programme.

The three ‘resources’ projects in this programme tried to transform the existing model by showing how new alignments and partnerships at various levels could render online teaching more efficient. In the case of BlendEd⁸, by demonstrating the impact of real collaboration across Colleges. For CeLLS⁹ the key idea was the collaborative development of high quality learning objects for sharing online across institutions teaching a particular curriculum area, in this case life sciences. Finally, the e-Construction project¹⁰ tried to use the design of technology-mediated materials to transform attitudes to teaching and training across an entire industrial sector – in this case the Scottish construction industry. Again, these are approaches that are aimed at a level not really addressed by the Pew focus on individual first-year courses.

DISCUSSION: HOW DO THE PROGRAMMES COMPARE?

The simple message that emerged from the Pew Grant programme was that the introduction of technology-enhanced learning in suitable courses can lead to significant cost reductions allied to improvements in learning outcomes. How transferable is this to the UK context?

Like the UK programmes, the Pew participants redesigned their approach towards a more constructivist, student-centred, task-based form of learning and teaching, with technology playing an important role only to the extent that it facilitated the pedagogy. A key factor in the achievement of cost savings was the use of peer (undergraduate) and graduate students as tutors, offering on-demand help.

The main contrast between the two UK programmes can be described in the following way. Despite its name, the benchmarking/Pathfinder programme is essentially aimed at building capacity across the sector. Each participating institution is implicitly encouraged to analyse where it needs to focus its resources in order to get to the point where e-learning can become fully embedded. This means arriving at a position where e-pedagogy will be implemented spontaneously at the module level, where the VLE will become properly integrated with management information systems as well as with e-portfolios and Web 2.0, where both academic and support staff will be fully aware of the all the possibilities e-learning can offer, where students will be fully empowered in their use of e-learning tools, where the design of learning spaces will align with student-centred pedagogy, and above all,

⁷ <http://isle.paisley.ac.uk>

⁸ <http://www.blend-ed.ac.uk>

⁹ <http://www.cellproject.org>

¹⁰ <http://www.learnirectandbuild.com/Transformation/course5.htm>

where the quality procedures for course redesign and course review will lead seamlessly to a constructivist pedagogy where technology can be used to achieve deep learning. The benchmarking phase in the English programme can be regarded as serving some of the purposes of the design of the programme and the project selection phase in the Pew Grant and Scottish transformation programmes. Every participating institution has acknowledged the results from benchmarking that reveal the gap between current capacity and the HEFCE measures of success. The Pathfinder phase is aimed at helping to put in place the process of filling the gaps and then developing beyond the stage of embedding. It is acknowledged that the funded programme is only the first step for most institutions, and the process is long-term.

The Scottish transformation programme was more ambitious in its aim to demonstrate Pew-like benefits which would be seen at a cross-institutional level. Essentially, this required projects to move beyond the course-level aims of the Pew Grant examples, to demonstrate how technology enhancements can achieve cost and quality benefits across collaborating institutions. Like the Pew Grant programme, this assumed that capacity for e-learning transformation was already present in the sector, and it further assumed that with two years development it could be demonstrated how this capacity would transfer across institutions. In Scotland it seems likely that none of the responses to the call for proposals fully met the ambitious criteria that the SFC had sought. While it could be demonstrated that isolated courses could be transformed, none of the projects could call on existing capacity to demonstrate transformation on the scale envisaged.

The Scottish projects have produced blueprints for institutional transformation, rather than demonstrations of its achievement. The outputs of the projects now seem like the kind of proposals that the programme sought initially. To take one example, TESEP is implicitly trying to drive transformation from the learner up, through raising the students' willingness to take more control, and to try to exploit the power of social learning that is made effective through social software. There are many still-untested assumptions here, but it is clear that a long-term change process is required for the joining up of policies on induction, digital literacy, generic skills, peer support, assessment, transition, and staff development, with policies on VLE development, the design of learning spaces, and quality procedures for curriculum development and course redesign. This is a very tall order, and the e-learning programmes described here can be regarded as having scoped the requirements for long-term change, rather than having demonstrated transformative solutions through the kind of interventions possible in short-term projects.

CONCLUSIONS

We should be cautious about trying to make an overall assessment of the value of programmes that are still underway. However, there is one issue on which both the UK programmes have converged, and that is over the value of partnerships. The e-learning capacity to be found in the sector vastly exceeds that available within any particular institution. The desire for teams from different institutions to work together over the building of capacity has emerged from both benchmarking and Pathfinder, and it features as a defining characteristic of the Scottish transformation projects. Five of the Pathfinder pilot

projects are now taking their work forward for the benefit of the wider programme, through the formation of special interest groups and the cascading of course redesign or change academy events into other institutions. In the Pathfinder main phase the 28 projects are being encouraged to share their development activities closely with related institutions. They are clustered into seven groups of four institutions, each supported by a 'critical friend' and each funded specifically to host a joint meeting of the cluster. It is to be hoped that the model of partnership emerging here, involving benchmarking followed by capacity building beyond the level of the individual institution, will be seen as a lasting benefit from these national programmes and a sustainable basis for future policy.

The central question here is the effectiveness of national initiatives on e-learning development. An examination of the three programmes leads to the conclusion that the way in which the initiative's goals are framed, and the way in which projects are chosen to participate, is the major determinant of outcomes. The Pew programme chose to fund particular courses where the readiness of the course designers to move to a more activity-led pedagogy for first-year students was the key criterion for inclusion. The introduction of e-learning methods was in most cases secondary to the pedagogical redesign, and the cost benefits were largely achieved through delegating dialogue with individual students to lower-paid staff or to peers. The measurable benefits of the two UK programmes are not yet clear, though participants in both programmes seem more likely to move away from a crude delivery model as a direct consequence of participating in a capacity-building programme. The Pathfinder projects are, far more than is usual in development programmes funded centrally, building capacity as much in areas of weakness as of strength. This is a consequence of allowing institutions to base their proposals on their own analysis, through benchmarking. The Scottish transformation projects have also reflected the criteria for selection on which that initiative was based, with a focus on building new collaborative relationships between institutions. In all three programmes the role of e-learning per se has come to seem less critical to the success of the developments than other factors. Capacity is seen more clearly than before to involve an institution's confidence and willingness to embark on course redesigns that favour an activity-based pedagogy, rather than favouring the development of technology-defined learning environments.

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