Spent force or revolution in progress? eLearning after the eUniversity

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Section 1: Introduction

1. Elearning (eL) - the deployment of computer and/or networking technologies in support of the eLearning process - is here for good and is being incorporated in various ways into what UK HEIs provide. Some thought that its main role would be for adult learners based entirely abroad. That hypothesis was tested and found wanting. Instead, we see a growing volume of relatively low key development largely in blended learning where eL works alongside traditional pedagogies for the benefit of learners on campus and elsewhere. This trend will continue and has the scope to transform HEIs.

2. eL is no longer something separate from mainstream learning. eL is taking root in departments, usually but not always with (at least tacit) support from central units, as part of an evolution. The process is steady and irreversible but currently the purpose and usage of eL are locally determined. The sometimes difficult task for an HEI is to operate as a whole, integrating activities into its Learning and Teaching and related frameworks, modifying both if necessary. This is what is now happening in a collaborative fashion, and with appropriate national support.

3. Section 2 looks at some of the ways in which things are changing locally. Section 3 considers the English history of initiatives in order to put the emerging trends in context. eL seems largely to succeed for an HEI precisely when it helps to deliver core teaching functions and when it fits with other work patterns.

4. Arms of Government such as the DfES, HEFCE, and the Joint Information Systems Committee (JISC) have spent a lot of effort in providing, updating, and reworking a connected national strategic framework, supported by extensive experiments and programmes. UK eUniversitites Limited (UKeU), the University for Industry (now *learndirect*) (UfI), the National Health service university (NHSU), and others have also produced extensive high level reflective strategic documents. These address philosophy, theory, and international and other alliances that will underpin national activity. Section 4 describes these high level strategies as well as others more directly aimed at achieving measurable gains for a specific organisation, for instance that from the Police. This addresses the need to solve real and immediate problems of putting learning in place to meet specific objectives. The two sorts of strategy have differing gestation periods: the former have a need for wide consensus building which takes time, whereas the latter, which relate to the needs of individual HEIs, work to achieve already agreed targets.

5. In contrast to recent developments in higher education, Industry work on national issues has recently slowed dramatically with standards bodies making less headway and software teams downsized. This perhaps results from a failure to raise as much revenue as anticipated: industry is waiting for more uptake before investing further.

6. A major characteristic of recent developments, and of work in the eL area in particular, has been to expose a number of tensions within existing thinking in HE Learning and Teaching. Examples include those between the benefits for an individual academic and those for the HEI, between developing more materials and deploying existing material more effectively, and between fundamental educational research and descriptions of monitored development and usage. None of these are eL specific but the eL dimension can make them more acute. For example general

(e)L research is often accused of being devoid of reference to the practical problems facing HEIs such as those of interworking with pre-existing, inherited (and hence called “legacy”) systems such as those for student monitoring or quality assurance.

7. By contrast, discipline based research has often been largely concerned to describe a specific use in a given course without wider context or even institutional relevance. A lot of problems have arisen from a past of ring fenced, project-based provision that encourages closed work from the funded team and inhibits wider usage within the normal HEI environment. More recently, the need to bring together practitioners, researchers and organisational managers has been identified, and a number of bodies and agencies offer support for this and for the associated professionalisation of those involved. Some local and national “turf wars” have resulted, but mostly the agencies work together effectively in a way that allows HEIs to tap into the structures if they do so intelligently. Section 5 addresses research and professional questions.

8. The current language of national bodies is of “embedding” eL into an HEI. This could represent a view that HEIs may soon no longer need financial encouragement to engage with eL, but will need support with structures and models, and with finding appropriate standards and procedures. Thus, in section 6, we consider options for taking things forward, nurturing current usage, growing the base, and solving real problems. There is much advice available: JISC has been writing advice for senior managers for over a decade. We suggest how to draw boundaries between what an institution needs to do itself and what it can reasonably expect to import from the community with the help of the various agencies, or from third party suppliers.

9. An early draft of this paper was discussed by a group of experts. The author is very grateful for the help of Paul Bacsich, John Cook, Patrick Dark, Lawrence Hamburg, Dick Hill, Robin Mason, Sarah Porter, Rhonda Riachi, David Stephenson, and Brian Sutton.

Section 2: Trends

10. So what has happened in UK HEIs? The answer is a lot and it has been driven from small group activities and projects. Many local approaches have been adopted with local funding support. National structures and initiatives have given the UK a large set of people who now assist change and make an impact in small progressive ways. National infrastructure has also supported sharing and transfer.

11. To understand the relative success of the evolution of eL from local and small-scale origins, one first needs to note the revolution in work and office practices that the UK has undergone. The networked PC is ubiquitous in office environments both within and outside education: information systems are accepted as part of life. Practices from one part of the work environment have then transferred to others and to the home.

12. The uptake of IT in academia has been research led and it is now very hard to be research active without exploiting computing and networking technology. International research community "e-villages" are currently the norm. However, people do not do claim to do eResearch – they merely rely on e in doing research. The transfer into administration (again there is no concept of separate eAdministration) is well advanced with systems increasingly in place, accepted, and interworking. However there are still senior people in post who were part of a "my system must not be accessible to students, academics or the VC" school. Evolution has therefore sometimes been slow but most HEIs now have improved student record, admission, and finance systems, and allow controlled access through a web interface to those with a proper need to use. It is thus the increasing pervasiveness of the technology elsewhere that is eventually transfering to its use in an area where HEIs have with reason been conservative – teaching and learning.

13. It is easy to see how changing office practices have been adopted in the teaching and learning environment. For example, many tutorial and academic staff now encourage students to email questions rather than "corridor lurk". It fits their normal work practices. This is not itself eL but becomes so when then picked up across a larger unit and formalised into systems that allow forwarding etc. so that there is a departmental or wider support system in place. Yesterday's "some of us have open doors and there are surgeries" is today's "the department always answers student emails within x hours." Furthermore, learners increasingly expect such treatment: currently user wishes seem to be increasing in importance.

14. Such developments allow learners who are off site for whatever reason to access learning and resources as if on the main campus. Most value the option even if they do not all use it. Libraries increasingly offer some resources on line only and have proper legal and technical underpinning for these. Teaching staff often encourage such anytime, anyplace working by making study materials available electronically including notes and "model answers". Again such developments are evolutionary as they shift individual practice into policy for courses, departments, faculties, or HEIs.

15. With increasing diversity of the student body, the use of technology to support "remedial" work is increasing. Systems allow learners to address an individual learning deficit when it is identified. This could be discipline specific or study skill related and provision in the latter can achieve economies of scale. It is

facilitated by physical adjacencies between skills support and eL support. A related requirement is for the availability of more pervasive cost effective formative assessment so that learners get good feedback on their progress.

16. Administrative tools tracking progress and identifying students “at risk” have clear benefits given current performance indicators. This is an area where commercial systems can perform well: they have been developed for other sectors such as industry CPD where there is a similar requirement. Accordingly, new development is unnecessary here and HEI activities can be focussed on expanding use.

17. Local infrastructure has been evolving rapidly to help facilitate the move to more general adoption of eL. Most HEIs have some form of learning and teaching unit with a strand of support for the pedagogy and technology of eL. They intermediate between practitioners and local and national pedagogic experts. Progress is made easier by the existence of a culture of monitoring, evaluation, and reporting engendered by the funding councils, JISC, the Quality Assurance Association (QAA), the Association for Learning Technology (ALT), and others.

18. As a result of this culture, the local unit can become a custodian of good eL practice and a broker for its wider acceptance. Both the initial growth of systems and the subsequent brokerage are well illustrated by summative assessment. A significant number of home grown individual or departmental assignment submission systems have been funded and written and many are still deployed. Some, but not all, have involved negotiation with the learner. Some have involved comparing answers with one another and common texts and websites to detect plagiarism. Some have involved automatic marking. Few connect to HEI student record systems. However local units now know about them and have been helping put experts and departments together to look at their effectiveness and improve them and in some cases suggest their wider adoption. Departmental exam systems have a similar trajectory.

19. As well as institution-wide developments, some activity remains subject specific and sometimes cross sectoral: a good example is language teaching where pre-existing use of technology for teaching has led to acceptance and well developed pedagogies and techniques.

20. In the adoption of eL we see a repeat of a clear pattern. UK HE has a distinguished history of leading edge innovation in IT. Just as 1995-2005 was characterised by HEIs building their own learning management and content management systems, so 1955-1965 was characterised by HEIs building their own hardware, 1965-1975 by building their own operating systems, 1975-1985 by building their own superstructure such as word processors and compilers, and 1985-1995 by building their own networks and browsers. JISC and its predecessors have been in the van of these trends. Nearly all activity was eventually superseded by standard products as industry caught up and overtook as business opportunities arose. The initial leaders often had the biggest retrenchment task as they were those keen, big, and rich enough to find initial resource which was then supported by industry adoption and adaptation. Manchester, Newcastle, Edinburgh, and Cambridge for instance have found themselves in this situation over the past four decades.

21. The UK leader in eL remains the Open Univesity (OU). Its business depends on remote cost effective, well organised delivery of learning and, in the case of eL, good support for its tutorial model. It has especially invested in support for remote learners involved in student centred collaborative learning, for example threaded discussions where learners contribute to a discourse which can branch and reunite, and collaborative authoring.

22. As with the others, the OU has developed extensive leading edge local systems some of which are wrapped round commercial products. However, these are unlikely to be taken up elsewhere, although the underlying pedagogy with its emphasis on mapping specific learner requirements to the best ways of meeting them is the key to successful deployment. The OU has extensive systems for submission and return of assignments, content management, tutor feedback, support and other tasks. By contrast it has done relatively little courseware development of the sort that the major funding body initiatives have encouraged. Nevertheless, most OU learners now have significant eL components in their learning.

23. Other HEIs now have similar high levels of engagement with eL. There are many examples of widespread deployment but they are distinctive: they are always within the specific structure and framework of the HEI and are integrated with local quality assurance and systems. Some sites have developed subject specialisms and these often now coincide with Higher Education Academy (HEA) subject centres whose role is to give support in all aspects of learning and teaching to a defined subject community.

24. The presence of a subject centre (and possibly in future a relevant Centre for Excellence in Teaching and Learning (CETL)) facilitates the necessary human networking. Whilst only a few short listed CETLs are specifically eL focused, the majority include some reference to this and hence will resonate with the model of embedding the eL into learning more generally.

25. Looking at catalogues and at papers presented at conferences, almost all UK HEIs have eL activities in one or more departments: these are often not mutually compatible although current standards work may help with future compatibility. Software has until recently been relatively cheap for the initial purchase, but with no subsequent economies of scale, and thus there was no incentive for departments to collaborate. In 2000/1 there were over 50 home grown eL “systems” in the UK - a large investment of public money not always with commensurate return. This period is hopefully ending as marginal increases of use of commercial products now attract lower additional cost. This proliferation has been encouraged by a past of initiatives and programmes: individuals and groups have been externally funded to purchase or develop the product of their choice. Now a transformation is underway from individual to group and from group to department, faculty, or HEI. Development will continue and still needs to be encouraged but it needs to fit better into HEI overarching structures and to be less time-consuming.

Section 3: Some historical reflection

26. The past of national funding body initiatives has had a positive effect on the set of people now involved in the evolution of eL within HEIs. Nevertheless there is a widespread view that these initiatives have not delivered as much learning support material and especially its deployment as they should. This section looks at the larger initiatives to see what can be learnt by an HEI from them.

27. Some put the first initiative in UK HE as the National Development Programme in Computer Assisted Learning (NDPCAL) in the early 70s which floundered on the quality of the hardware and software then available. Perhaps better known and also mainly directed at awareness raising and trialling, is the Computer Board's 1973 Computers in Teaching Initiative (CTI), enhanced by the UGC with a major scale up, a part time coordinator and a support centre (CTISS). The early involvement of professional support and the sharing of results undoubtedly contributed to its relative success with many of the individuals involved still in the sector often leading support centres or as senior HEI managers. At its height the CTI funded 139 projects of various sizes and scales. Projects were funded across sites, disciplines and with differing types of bidder – from professional research bidding shark to previously unfunded mainstream teacher.

28. The traditional higher education ethos and promotional routes coupled with highly selective funding for research only, cause the main driver of academic staff to be to publish research. Most therefore try to give a research focus to anything that they do. leading to a concentration of work in new development or facilities. CTI projects, whilst locally largely successful, were nut usually widely disseminated because there was little incentive for those involved to expend effort on this; and so the Computer Board (by now the ISC) set up a set of subject based support centres to help with transfer and dissemination. This very successful model, due to Herbert, has subsequently proved very resilient to the many subsequent changes in funding arrangements and has fed though fairly directly into the current HEA subject centre structure.

29. Following models that were evolving in the US where problem, case study, and scenario based teaching were being supported by extensive on line materials, the Teaching and Learning Technology Programme (TLTP) was introduced in the early 1990s in an attempt to explore the use of technology as one way of making HE more cost effective at a time when student numbers were increasing rapidly. The development of such materials is expensive and so sharing, transfer and large scale delivery was again thought to be a desirable way forward. Again the objectives of the academics involved were primarily publication and development and so the usual tensions emerged but the initiative evolved a coordination model that has subsequently been much copied, and developed good practice for projects such as a properly representative steering committee.

30. The stated purpose of the TLTP was to try and find ways of enabling universities to manage the expansion that the government was expecting them to deliver with large reductions in the unit of funding. It was predicated on the view that common course materials mediated through IT would enable high quality teaching with reduced staff::student ratios. This was never really tested: it was found less palatable than finding the savings elsewhere. The use of course materials

developed by others required academics to sacrifice a degree of independence and this proved to be a stumbling block.

31. Other related reasons for this failure included the lack of (research) rewards for academics taking part, no culture of sharing or learning from previous initiatives, too little regard for pedagogy, no wish to work within local HEI policy, and not enough appropriate infrastructure in the HEI or nationally. Another major factor was the lack of concentration - originally TLTP was to have focussed on service mathematics and languages only but the programme rapidly got diluted in the wish to appear fair.

32. Service courses were chosen as being especially relevant for a number of reasons. Firstly there were existing success stories in CTI on which to build. Secondly, in service courses the delivering unit is not always in control of the resources available such as the number of lecture hours and tutorials. Thirdly there was a feeling that academic staff were likely to be less wedded to the “not invented here” syndrome in service teaching. Indeed perhaps this last reason gets to the nub of a model in which a single group develops materials that are intended to be widely adopted by others – it only works when the deliverers can be imposed upon – most commonly by them not being tenured academics.

33. In 2000 HEFCE persuaded the DfES to inject substantial sums into a new project, then called the eUniversity. A number of organisations in former colonies and dominions were offering accredited courses at undergraduate and postgraduate levels taught fully at a distance using eL to worldwide adult learners. It was felt that England was in danger of missing out on a lucrative opportunity and that its own HEIs were too small and lacking in expertise to compete without central help. This hypothesis was never tested. The original idea was again to concentrate – this time a small number of HEIs that knew what they were doing or could at least learn together fast was proposed with tightly defined and coherent offerings. Then came consultation and the sector clamoured for equal opportunities in the venture. The resultant dilution led to extra work, delays, and many HEIs openly not putting forward their offerings which were most likely to succeed.

34. There are many people currently researching the reasons for the demise of UKeU. A possibly oversimplified explanation is that no-one actually had a primary interest in its success that was overriding. The funding body could not drive the venture as it was concerned neither to break funding rules nor to act or appear to act as a shadow director. HEIs and commercial suppliers became solidly focussed on getting as much money as possible up front to fund their own development while avoiding sharing risk. No collegiality between the HEIs involved was built up – indeed they viewed one another with mutual suspicion. This contrasts with similar ventures in some other countries where a class system of HEIs is less firmly rooted. Senior staff form the private sector seemed interested in defining their success in a variety of ways few of which related to obtaining learners, and the Government seemed primarily interested in having reports of a successful public private partnership. Thus at key moments when changes of course were necessary, there was no-one driven by the concept of making English HE eL more widely available. Instead much effort went into work involved in developing a customised platform, in appearing to show that there was a major private sector risk, in a large number of offices overseas, in developing a large number of high brand programmes, and in a substantial Central London presence.

35. A good example is afforded by the platform. Originally the platform, both hardware and software, was to have been invested by the private sector. Hardware was indeed given as were some licenses, but the original offer to give the software was progressively watered down as the “dotbomb” crisis developed and as the requirement expanded. Timescales also became increasingly problematical. Faced with the possibility of no private sector investment and a change of status with all the reporting and legal work that that entailed, the system found itself incapable of changing course and was apparently sufficiently worried about the PR and other side effects not to put in place normal transitional backup arrangements.

36. The (very few) successful independent eUniversites are fully focussed on delivery from the beginning. Their major risks are in increasing order of importance no platform, no cash, no suitable programmes, and no learners: the last is the dominant one and so informed marketing is a high priority from the start. As a result, they have appropriately set learner delivery targets with corresponding management targets, are encouraged and supported by funders to deliver, do not spend time trying to fit clearly failing models, and have a management set who have some grounding in the business: they essentially act initially as a small science park start up. Even this by no means guarantees success, but it is necessary.

37. The UKeU timing was at best unfortunate, the markets poorly chosen (an early decision was not to compete in the mainstream markets in the “Anglo Saxon World” but to concentrate on developing countries), and a complex model of committees, contracts, and partnerships made it very hard to be sufficiently nimble to change course as required to succeed. UKeU passed away as have most similar structures round the world, including the US venture of the OU. England as a purveyor of the most up to date eL methodologies in HE was always going to jar in some overseas markets where the UK brand is associated with traditional delivery and quality assured assessment and the avoidance of competition in the main market for eL was felt by some to be an indication of inferior product. Thus the big broker model failed in England sufficiently spectacularly to make repeat unlikely. The attached model, that has had fleeting success elsewhere, where an eUniversity is “on the side of” a high brand traditional one putting its learning materials such as videoed lectures or notes “on the web” without offering much else has also not been successful. UK QA processes have rightly made it hard to sustain alongside accreditation.

38. So what can an be learned from this? Firstly to keep models simple and in line with normal procedures. Secondly not to spend too much on development of courses or platform without a clear idea of market. Thirdly to build testing and trialling into work and to do so early. Fourthly to concentrate at least initially on where gains are greatest. Fifthly to share wherever it is feasible and realistic. Finally to ensure appropriately qualified, professional, and motivated management of the process.

Section 4: Strategies

39. In the last few years organisations in the UK have increasingly adopted a strategic approach to all aspects of their activities. The HE sector has often been at the forefront of this extensive national effort. Some reasons for this are those of management of change. The UK HE sector has changed more rapidly than that in some other countries, facilitated by clear statements of strategic direction. However, as noted above, there is a spectrum between consensus driven strategies for government bodies setting a national framework for their clients, and more directive strategies (closer to tactics), needed at a more operational level. What strategy formulation does an HEI now need?

40. Strategies in different areas do not always align and few HEIs have yet tried putting their many strategic documents into a vehicle in which cross links between them are explicit and kept up to date, such as a single integrated web site. Neither has government. Thus strategies can and do conflict.

41. In eL and elsewhere there is a spectrum of strategies between the wholly reflective and facilitating, which set a national framework, and those directed at action to achieve specific aims. The emerging DfES strategy for eLearning is perhaps at one extreme of that spectrum. It is an inclusive *unified* strategy and attempts to cover the full range of learning although the emphasis is on schools and FE. The intention is that each strategic area should apply to all sectors of education. There are a number of action areas and proposals for partnerships. There is a major emphasis on sustainability including the search for the holy grail of full reusability. The argument here is that costs are high and so one has to reuse material as much as possible to justify investment. This itself leads to concepts of reusable learning objects (a learning object is a self contained piece of learning including assessment: it can have prerequisites and corequisites and can attract credit) – the building blocks of eL. Models for supporting teacher (but not learner) innovation are also emphasised. The strategy identifies reward problems for teachers and the needs for proper support, appropriate assessment, and standards.

42. The HEFCE eL strategy, now being re-released after remastering including the removal of many references to UKeU, is concerned exclusively with HE and stresses the need for HEIs to make progress by themselves within a supported framework of national advice and guidance from JISC and HEA. The model suggests HEIs moving towards delivery on or near campus but at a learner chosen time and place and with appropriate pedagogy. It covers much familiar territory including widening access, the need for research, and the need to support lifelong learning.

43. JISC thinking fits in with this and is the major practical activity focussed piece of national thinking available. Many JISC strands come together to support eL. The aims of JISC include providing advice to institutions enabling them to make economic, efficient and legally compliant use of ICT, helping the sector provide positive, personalised learning experiences, and aiding student progression. JISC therefore develops national infrastructure, experiments with models for local infrastructure, and advises on the results. It has a strong background of system trials and eL experimentation. It has a strong standards activity often leading the UK effort. It will fund innovation and will also track technology and evaluate new

emerging ideas and products. Unlike HEFCE it is cross sectoral embracing FE as well as HE.

44. There are inevitably some problems with a body with clear client communities. JISC arose from Computer Centres but has expanded its clients to include Management Information Systems groups and Libraries. JISC largely funds things that its clients want to offer. It is keen to see uptake of what it has already funded so, for instance, it encourages work making materials developed primarily for research available for teaching use using “ugly sisters glass slipper fitting techniques”. Digitisation and support structures are priorities. JISC is an excellent way of gaining ongoing advice, help, and sometimes funding.

45. A major effort of JISC for some time has been to produce transferable tools to aid those working in the field. This often seems to be a triumph of hope over experience: academics are unlikely to use the tools of others until their motivators and rewards cause their behaviour to shift away from new development and innovation in this area. However, in anticipation of that day of reawakening, the resultant tool and related libraries have been well documented, evaluated, and archived.

46. HEA is the other main player. HEA will take a special role in the “people” area where the Learning and Teaching Support Network (LTSN) has held expertise since inception. HEA is currently consulting on its future activities and shape and so it is too soon to be specific about its role and influence.

47. These strategies are wide reaching and aspirational in nature with long payback periods and little reference to cost effectiveness. They are suitable for HE national bodies and set the framework within which those with the task of delivery must operate. By contrast the Police strategy is an example of an implementation-oriented strategy, and is focused on delivering Quality of Service to identified learners and hence improving standards within a short time frame. The aims are articulated up front and include improving retention and addressing individual skills deficits. The strategy is written from a learner’s viewpoint: it is not provider led. There is a need to see a return on investment and a need to impose standards to allow transferability and maximise the return. As a result the strategy is short but the tactical consequences – for example for procurement models and standards - are expanded and made operational. The emphasis is on enabling access to opportunities for the learner and allowing choice. Timeliness is also a major consideration. The bulk of the document is an immediate implementation plan.

48. Another delivery focussed strategy is that of The Army. There is an immediate need to produce people who are more flexible, better prepared and better integrated. Education and training play a major role and again it is possible to articulate specific aims and in some cases targets. The strategy is written by practising teachers and so is learner centred. Aims include cost effective delivery, improved support, targeting some learners, increasing opportunities, and a reduction of direct face to face tuition time. They present the implementation round a five part model with subsections for:

- Infrastructure (network access, administration systems etc)
- Facilities (machines etc)
- Courses (some learning to do)
- People (cultural change, support, and related issues)
- Funding

It seems that many other strategies that have agreed aims and are tactical in nature can be recast into this framework which may be worth considering for an HEI.

Section 5: Research and Professionalisation

49. To deploy learning technology successfully people are needed with an understanding of the systematic application of a core body of knowledge to the design, implementation and evaluation of learning. The growing body of research into deployment of technologies to facilitate learning indicates that new knowledge arises as pedagogic paradigms and technology possibilities interact. The substantive body of existing practice based research is now being supplemented by theoretical underlying principles. Relationships between discipline based people, technologists, and educationalists are being established based on mutual trust and recognition.

50. Research (including evaluation) adds value by improving understanding and facilitates effective evaluation of technology-based applications which then helps to avoid expensive mistakes in deployment or purchase. Furthermore, as a result of activity in this area, new workers are brought into academic research, and this happens in an interdisciplinary fashion.

51. The DfES and HEFCE strategies both have major sections on research and on professional development. This follows a large number of experiments in which research work failed to input into L&T activity to its detriment. There is a pool of research and professional knowledge and expertise that is not always fully utilised.

52. There are a number of reasons why much current research is ignored. Problems include the failure to learn from previous work, the short term nature of much evaluation, the use of over simple proxies such as completion rates and exam results to measure effects, and the poor connection of many (often part time) workers within the research base. As a result, there is a need to disseminate results of appropriate research better to inform policy makers and those wanting to deploy the technology.

53. Although there is an increasing amount of research in eLearning, such research is often accused of being devoid of reference to practical problems facing HEIs, such as those of interworking with pre-existing, inherited (and hence called “legacy”) systems – for example those for student monitoring or quality assurance. Discipline based research has often been essentially descriptive and aimed at the RAE. However, more recently, a number of bodies and agencies have identified and are meeting the need to bring together practitioners, researchers and organisational managers who are engaged in eL.

54. There is a need, then, for more widely applicable research: the ALT research strategy lists a set of ten key research problem areas that are largely independent of pedagogy and technology. These include reusability, interworking with existing legacy systems, working across a diverse set of learners, maximising retention, making assessment more relevant, and designing learning that is cost effective, efficient, and has support for quality assurance processes inherent within it.

55. These are precisely the problems that institutional managers want to address as they seek to deploy IT in support of learning, and it is interesting that each question has an associated set of underlying knowledge, skills and principles that practitioners need to understand. For example the need to interwork with legacy systems is an area where the private sector has a lot of experience and skills and

has identified techniques and principles but it is under researched in UK HE. Underlying principles include the need for clean interfaces and standards, the requirement for pedagogy, perhaps transitional, that will work on either side of the legacy divide, the necessity for resilience over a transition period so that either old or new systems will work, and the requirement for coherent related assessment and QA regimes. Some heuristics for deciding when to discard a legacy system and when to develop an interface are available. Legacy QA systems can themselves be troublesome and more work is needed on quality assurance processes, particularly in the online environment. Legacy systems here need a wide interpretation and include software, hardware, and people.

56. On the people side, as in the past with other new professions such as computing, a corpus of core principles and skills that define “professionals” is slowly emerging. A Wittgensteinian “ceremony” is arising, where a unique identifiable language of discourse emerges. With JISC support, a consortium project called CMALT is attempting to define core attributes for accreditation, thus providing a career structure for the growing number of Learning Technologists that UK HE is already employing, usually in support roles. Some attitudes within UK HE towards such people have been very hostile, perhaps paralleling the attitudes of some GPs to paramedics. However, recently there have been moves towards course teams involving both academics and “para-academics”including Learning Technologists. The work of ILTHE, HEA and others has helped to give professional career paths. There is also need for professional training for academics: this is coming about through the accredited courses offered by most HEIs.

Section 6: What should an HEI do now?

57. Thus the national literature and actions suggest a move towards an environment in which there is national infrastructural support for implementation of an agreed action based HEI eL plan, written with the involvement of and facilitated by professionally competent individuals, meeting the needs of the HEI, and properly informed by research and evaluation at the HEI and elsewhere. Is this now possible for every HEI given appropriate planning and action?

58. The answer is yes, and most HEIs have started but sometimes in an eclectic fashion. This section looks at one approach to achieving such a plan. Uniqueness is not claimed and there are other similar “guides” available.

59. Firstly it is vital to be clear on what is to be achieved and why. The answer should not be referenced to eL but to management and learning objectives and to finance. At a top level aims should be simple, and can be borrowed from others. Examples include:

- Making (specific) courses more cost effective: costing methodology is advancing and this could include making less use of expensive materials or travel, cutting face to face involvement, deskilling tutoring requirements, or improving tutor performance
- Making courses more learner centred: this includes extending the availability of learning opportunities in time and space, offering diagnostic testing to help identify learning deficits and/or then material to address them, and extending opportunities for learners to demonstrate achievement of learning outcomes
- Improving the management and organisation of courses for quality and other purposes: this includes identifying and maintaining standards, , building in QA reporting, disintermediating administrators, and improving monitoring of learner progress with a view to identifying those at risk of dropping out and taking appropriate actions
- Improving the assessment environment: this includes reminding learners of impending activities or deadlines, offering formative assessment and good feedback cost effectively, and improving the match between learning outcomes and assessment.

60. This list is not exhaustive and each activity corresponds to things being done somewhere in the UK. Many items will need careful recasting as the view moves from management to faculty to department to individual involved and that is itself a task for management to oversee.

61. Much can be achieved by deploying “off the shelf” software but some will require thoughtful deployment in part using trained “learning technologists”. Not all things will apply across the HEI: for example in a subject where undergraduate numbers are declining nationally, with a consequent reducing student to staff ratio, cost savings may not be available from investment in developing materials to minimise tutor skills. Thus each aim needs a domain of applicability driven by a combination of cost benefit; risk, especially reputation risk; and suitability. This can cause annoyance (or joy) for those excluded: there is thus a further need for care in implementation. The emphasis should be on taking things that already achieve an operational objective in the HEI or elsewhere and modifying them to make them

work more widely as needed to meet the objectives. For each aim and area this will require some resource which is likely to be scarce.

62. Rostering central resources efficiently in support of HEI objectives can be a hard problem. It seems best to start with the people requirement and the support issues. HEIs need access to the support of appropriate professional expertise and most find it best to have some support in house - for instance within a Learning and Teaching unit. ALT, JISC and others can then facilitate local staff tapping into the discipline, technology or pedagogic research needed to inform deployment. HEIs need the ability to interpret and apply the advice and allocate resources. In finding the staff HEIs are largely on their own: the field is competitive but some pressures are easing as supply increases. This is where an HEI has to be aware of national strategy – having local structures that interact effectively with national ones save time and effort.

63. Some approval and quality structures often need an overhaul or re-interpretation for eL. Assessment and other regulations seem to require work and the points at which central systems interact with departmental ones can be different for eL and so will need review at least. Committees need to approve the general framework such as the adoption of standards (international and local), and the material necessary to demonstrate conformance with them, as well as to approve the use of HEI resources to develop or deploy eL. Traditional course development had few non departmental staff cost implications and so the point of interaction with resources was departmental: now there can be a need to introduce earlier financial input. Letting departments drive development completely autonomously is likely to lead to an incoherent set of offerings with a subsequent cost penalty.

64. Advice within a discipline is often best provided through the relevant HEA subject centre. Much UK academically produced courseware is available freely and some other suppliers do not charge overmuch. Content is no longer viewed as a differentiator by most of the world – the publisher driven “content value” model of eL has essentially failed. This explains why for instance MIT gives content away freely. Instead, perceived value largely lies in brand, support, accreditation, and licenses to practice. The development of content, with its associated high costs, frequent delays, and in-built rigidity, which has played such an important role in the past, is slowly acquiring a prominence more aligned with its perceived worth.

65. Large-scale eL courseware development, especially by individual academics, if it happen at all, should be minimised, planned and phased in. Time from conception to use by learners is now seen as important. Areas with a “course team” ethos are more likely to be able to meet delivery targets by dividing up and if necessary redistributing work. It seems best to move in an incremental modular fashion so that blended options are available, for example by initially only redesigning say the tutorial element or by only moving to use a resource base made available by site license, leaving the rest unchanged.

66. It is important to develop the pedagogy, including models for support resources and their utilisation. It pays dividends in terms of learner understanding and utility. Content should be capable of being reworked each time through a course, as with traditional learning. It is more effective to concentrate on making available as widely as possible those facilities provided by eL which allow learner interaction and enhanced quality processes. As a result of the development of eL in an institution or department, one would expect major reworking of assessment,

increased learner centred techniques, more choice in demonstrating achievement of outcomes (e.g. through an ePortfolio), and more collaborative learning options based on a wider set of supporting resources.

67. One area for early review is QA procedures. QAability" of materials is important – support for QA systems needs to be built in to eL so that for instance equality of opportunity between learners can be clearly demonstrated. This can be a major advantage for eL over traditional learning. However, key decisions that impact costs and principles are made earlier in eL than in conventional development and so it is important to have QA that insists on early interaction with appropriate professional scrutiny. Proposals to deploy poor or conflicting systems need to be picked up and belayed.

68. When it comes to infrastructure, there is little need for senior management intervention. However, some decisions will point to the need to introduce, make further use of, enhance, or modify a piece of administrative software. This is where JISC advice and information is useful as few HEIs have enough technical expertise and time available to look at all possibilities though most have people who know the methodologies. Factors to be taken into account include cost, expansion capability and its cost, standard conformance, ease of maintenance and its cost, facilities, and the ease of interface to legacy systems and people. Risk is again likely to be a major factor and is not always considered, especially by a lone developer.

69. Most HEIs already have policies on such things as

- The web browsers supported by the systems
- courseware.
- Things that require extensive or expensive plug ins, which most HEIs correctly avoid (and where policy must apply equally to off-campus and user owned kit).
- Persistence of logins for off site vacation work.

70. In general, senior management does not need to intervene at this level. Institutions need structures that will enable decisions to be taken at the appropriate level on such matters, and the role of senior management can largely be one of joining up differing parts of the HEI where there are split responsibilities. For instance many processes are not yet properly joined up for the lifelong learner. The computing service or library is usually well aware of these problems and also those of ensuring appropriate licensing conditions for any resources used. Again structures that force early problem identification and planning are necessary – problems are often shelved or ignored until acute.

71. Nearly all HEIs in the UK are already part of this revolution, which will continue with drivers outside the hands of HEIs. Becoming involved is simple. Given clear aims, good advice, appropriate help, professional work, and a paced approach, rapid progress should be made. The UK has learnt from its past: the grand initiative era is over. We now need to quietly get on with the mainstream usage.

72. To benefit most, an HEI needs appropriate pedagogy, professional resource, and structures that allow planning of the ongoing development of eL within a

coherent institutional framework and infrastructure. The HEI must enunciate that framework for itself and then implement it through appropriate HEI infrastructure. However there is much excellent national help available and there is a lot of good practice on which to draw. Management push can be matched by central support pull