Costs of E-Learning Scoping Exercise: Discussion Paper

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During academic year 2007-08, JLT commissioned a small project to explore the *Tangible Benefits of e-Learning* at an institutional level. The outcome of this work was presented back to JLT during their June 2008 meeting. As a result the JLT charged the JISC Executive with an action to explore the area further and present an ideas paper for discussion at the next JLT meeting.

This paper is one outcome of that exploration. It is an ideas/discussion paper for JLT on areas for future funding that would build on the Tangible Benefits of e-Learning work, based on a review of current resources (including taking the best from earlier projects) and consideration of the JLT and JISC remits.

Annex B, "Costing E-Learning Scoping Exercise: Report", is a background report to this paper containing the majority of the evidence for our assertions.

Annex C is the original brief for the work.

1.   Review of prior work

A review (about 4 days desk work) of existing and prior work and resources held by institutions, projects, agencies and funding councils was carried out and came to the following 11 conclusions – 10 substantive points and one "out of scope" point.

1. There are around 10 methodologies for costing e-learning that have been developed in the last 10 years and that are believed potentially relevant to UK HE/FE. All have a common methodological base in Activity-Based Costing but differ in many other aspects, deeper and more superficial.

2. None are in routine use in any group (even a small group) of institutions in the UK – some are not ready for that, e.g. because they were developed abroad or are not yet operational, but some could be deployed. Thus there is no community of practice. In particular all the older UK-sourced methodologies (CNL, INSIGHT and TCO) have faded from HE/FE since around 2004. This is despite a considerable amount of promotion of the concepts and tools in the early years of this decade. The cause seems to be because of a lack of interest in the topic, surprising given the wider interest in costs and the rapidly increasing growth of e-learning. It may represent the situation that until recently in most institutions, e-learning was done on the fringes.

3. Not only are the methodologies not used, since early in the decade there is not even an active community of scholarship and research surrounding and comparing these methodologies. There are a few universities where there appears to be some earlier activity and continuing interest in these issues – including Chester, Derby, Edge Hill and Leicester.

4. The "information base" documenting these methodologies is not in good health. Some headline reports are recorded on JISC infoNet, others not – and there is a distinct lack of the "reports behind the reports" being visible in locations obvious to outside enquirers. This makes searching for relevant material extremely hard.

5. The best evidence from Benchmarking, Pathfinder, Maturity and related studies in HE and FE in the four home nations indicates that costing of e-learning is a topic that is at a low ebb and that institutions feel needs attention, more than for most other aspects of e-learning. However, there are some gaps in coverage of these

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programmes especially in parts of the Russell Group, in Scottish HE and in Welsh FE, which makes it possible that activity is under way but at a hidden level.

6. There is some operational use in the US of two earlier US methodologies but they have not made an operational or conceptual breakthrough, although costs of e-learning is a continuing topic of interest there.[2] There are also indications that good work is being done in the US for-profit sector active in large-scale e-learning, but they do not share information.

7. There is no sign of any routine use of costing of e-learning in any other nation surveyed, but some evidence that there is likely to be relevant material "out there" – it is a wide world, one that cannot be surveyed in a few days.

8. The experience from earlier attempts to import US methodologies to the UK is that despite heroic efforts to adapt the concepts and language to the UK scene, the methodologies do not "travel" – the culture is too different. This situation might be different for methodologies active in Australia or New Zealand. but there are none.

9. There is some evidence that in IT departments and libraries including in the UK there is some use of Activity-Based Costing – but it is not well documented in recent public reports. Much of this kind of work does not tend to appear on the public web, but rather on intranets or not at all. The people doing this work do not appear in teams engaged in change management or benchmarking aspects of e-learning.

10. Many of the experts in costs of e-learning relevant to the UK are nearing career retirement and most have in fact retired from their university posts. Thus there is some sense of urgency in ensuring that knowhow and tradecraft are preserved. In the UK there is at present no "younger generation" to hand on to – the few talented younger experts have mostly taken posts outside the sector or outside the country.

11. It was outside the brief to look at costs of e-learning in adult education and training outside HE/FE but general considerations and earlier studies indicate that there would be useful material – and with the Leitch agenda active some might argue that this material would be relevant to upcoming business in HE/FE. (Some examples of relevant reports are included in the Bibliography.)

2. Gaps

Evidential

1. As noted in #5 above, within UK/FE there are some gaps in evidential coverage of the "low ebb" conclusion – especially in parts of the Russell Group, in Scottish HE and in Welsh FE. The gap cannot be plugged by further web searches – it is likely to have to be plugged by a mix of surveys, interview and case studies – as was done in 1999 for the CNL study. The biggest gap is with those English HEIs who have not taken part in the HE Academy/JISC programme of Benchmarking and Pathfinder. Only a small part of the gap could be plugged by tracking the HEIs engaged in Curriculum Design since most were swept up in earlier programmes – the situation with Curriculum Delivery is not known to this author at the time of writing.

2. As noted in Section 1.1.5 of the Report (Annex B), it is likely that there are gaps in evidential coverage (a) in certain relevant EU/EEA countries (Finland etc), (b) at the EU programme level, (c) in some key countries outside Europe (e.g. China, Middle East/Gulf States, etc) and (d) in Australia at the detailed non-public level.

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[2] See e.g. http://144.162.197.249/annual_event/2006/presentations/index.html.

Conceptual/practical

1. The development of TRAC(T) is not at a stage when it can be used for costing e-learning and its current and future applicability outside English HE is not clear – in particular it does not apply to Welsh HE and will not apply to FE. In any case it is too detailed and retrospective for use by academics and staff engaged in curriculum design.

2. The older methodologies of CNL and INSIGHT are now not used in the UK. For whatever reason they did not catch on. To be used now they would require considerable refresh – but this is possible. Since INSIGHT admits its debt to CNL it would be prudent to start with that before going back to CNL, Flashlight etc.

3. The recent work of Professor Diana Laurillard is interesting but would have to be correlated to earlier and current JISC initiatives and focussed more on operational matters of interest to the majority of institutions implementing e-learning on a large operational way, most of these being new universities. Similar considerations apply to the Twigg NCAT methodology.

4. The OU approach might be generalisable and the OU has offered to make some details available of its approach but the particular types of e-learning supported course that the OU designs and delivers are still rather far from the majority of offerings of other institutions.

5. There are new developments, in particular Web 2.0 (including student-generated content), OER, a more demand-led approach to higher skills (Leitch and its relatives in other home nations) and adult learning, that are likely to require specific modification to any emerging methodology.

6. In contrast, although the Learner Experience studies are relatively recent the issue of incorporating student aspects into a costing approach is not new. It is not common in US approaches to costing (they have an equal difficulty with understanding specific issues of support staff) but students were incorporated as stakeholders into CNL as long ago as 1999.

7. The issue of demographic downturn[3] does not raise any specific issue but does raise the general point that institutions are likely to become more interested in methods of effective decision-making to ensure successful programme offerings – and costing is a key part of that. Their orientation is likely also to move towards more use of distance, flexible and work-based learning, taking it rather away from recent theoretical work which focusses more on enhancement of the on-campus experience.

8. The benefits aspects needs more attention than it has so far received. In addition to traditional measures of "quality" there is an increasing consensus that a focus on student time issues (both amount of time and quality of time – time of day/night etc) would be beneficial – and this is consistent with the approach to cost-benefit analysis of e-learning offerings in the training domain for the private and public sector (outside education). This again is not a new idea, but the re-emphasis on it is new.

3.   Recommendations

Unlike with benchmarking where there was an apparent superfluity of existing methodologies each with its own "claque", in costing we have a clean slate – and an overarching framework (on the realistic assumption that any proposed approach has a foundation in Activity-Based Costing).

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[3] See *The future size and shape of the higher education sector in the UK: threats and opportunities* at http://www.universitiesuk.ac.uk/Publications/Bookshop/Documents/Size_and_shape2.pdf.

Thus I recommend that effort is spent on three "task areas":

1. producing at least one "modern" costing methodology attuned to current needs in UK HE/FE – demand-led, step-change, controlled experimentation, distance learning, flexible learning, work-based learning, OER, Web 2.0, etc

2. ensuring that a sound information base of evidence and ancestor methodologies is created

3. ensuring that the missing evidence that would refine such a methodology (or methodologies) is (a) found and (b) incorporated into the information base.

Prioritising these aspects depends on the amount funding and is discussed in Section 4.

3.1 A new costing methodology

The Report provides evidence for the following features being needed in any new methodology/methodologies:

1. Alignment with any overarching measures of cost: TRAC(T) is valid in three home nations (but not Wales); FFE[4] is valid in English HE. (This alignment of an analytic tool with overarching measures is getting more common in benchmarking and maturity studies.)

2. A range of tools within a general methodology, oriented to different constituencies within the institution. (Decision-makers, programme leaders, support managers, finance staff etc.)

3. No residual US or Commonwealth tone to the tools: they must be UK in language and concepts. (That lesson has been learned the hard way.)

4. Self-extending so that new measures can be incorporated such as for Web 2.0 – or 3.0 when it comes. (A lesson learned early in HE benchmarking.)

5. Numbers at the heart of the system (think of accounting as the backbone) but softer measures (soft tissue) around this. (In fact this goes back to the origins of HEFCE work on Costing and Planning – see in particular CNL and INSIGHT.)

6. No limitation to particular views of e-learning such as "transformative" (NCAT) or "incrementalist".

7. Developmental not audit-based in tone. (A feasible model for this is the "engagement approach" used for the HE Academy benchmarking by the BELA team, linked to use of CAMEL if cohorts are involved.)

In an ideal world and in a way consistent with past practice it would seem to solve a number of issues and offer choice for the sector if *a number of projects* were funded to develop new schemes – led perhaps by the main protagonists of earlier schemes. This is what was done for benchmarking (in HE – but not in FE in England or Scotland) and at the time it seemed the best approach – however, it led to a lot of wasted and duplicated effort, reduced the "depth" of each methodology and finally made it much harder for funding councils and agencies to get an overview of the sector (which some HEIs may have seen as a benefit). Thus, given the funding profiles indicated, it seems better to put the effort into just *one* methodology (as was done for TRAC(T), by the way) – but to ensure via an Advisory Committee and project staffing that the leading experts are *all* involved. This is exactly the way that the Australian ACODE benchmarking scheme was put together. Of course such a cosy scheme can always be disrupted by methodologies coming in from outside (as with eMM benchmarking entering Australia from New Zealand) – but in costing e-learning we

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[4] Framework for Excellence – see http://ffe.lsc.gov.uk/.

have seen that there are barriers to that, plus past evidence that alien methodologies do not transfer.

Natural members of such an Advisory Committee (if not involved in the detailed work) would the lead developers of CNL (Paul Bacsich) and INSIGHT (David Nicol), Diana Laurillard, Melanie Burdett from the JM Consulting Team, and Greville Rumble (noted ex-OU expert on costs of distance learning), as well as nominees from JISC, Becta, HE Academy etc.

It would also be useful (resources permitting) to have one or two non-UK members knowledgeable on costing and familiar with the UK scene – in particular Betty Collis from the Netherlands (HE Academy Critical Friend and co-worker of the expert Jef Moonen) and perhaps Tony Bates from Canada (originally from OU but more recently an advisor to the Open University of Catalonia [in Spain] and to the Portuguese OU).

The team could be rounded out by a couple of representatives of "major e-learning initiatives" – providers such as the OU, London External, Derby, Staffordshire, Robert Gordon, Ulster etc – if not covered already via agency nominees.

3.2   Ensuring a sound information base

The obvious approach here is to build on and refresh the JISC infoNet material on costing.[5] However, even if the project were to be overseen by JISC infoNet, a wiki approach should be considered, in the interests of inter-agency cooperation, efficiency of content creation, and using more modern approaches suited to collaboration. It is clear from the author's own work that a wiki approach would suit the requirement, especially if using templates and categories (tags) as in MediaWiki – as used on the HE Academy benchmarkwiki,[6] the Sloan-C "Effective Practices" wiki, the TECFA wiki and the still-private research and EU wikis run by ALT and Re.ViCa respectively. Advice could also be sought by JISC from CETIS who run MediaWiki software for the CETIS wiki.[7]

Depending on resource, this task area would spiral out to somewhere on a scale from just documenting the main "ur-methodologies" to collecting a wide range of material to produce a "wikiography" of methodologies, countries and papers/reports.

3.3   Ensuring that missing evidence is found

This section discusses *finding* the evidence. *Incorporation* of the evidence is covered by Task Area 2. As noted in Section 2 on Gaps, there are five types of gap:

   a.   in parts of the Russell Group, in Scottish HE and in Welsh FE.

   b.   in certain relevant EU/EEA countries (Finland etc),

   c.   at the EU programme level

   d.   in some key countries outside Europe (e.g. China, Middle East/Gulf States, etc)

   e.   in Australia at the detailed non-public level.

Tasks 3b and 3c can be adequately covered by desk research (web searches and telephone/email consultation with experts) – note in particular Curran (2004) and related EU reports.

Task 3d cannot really be adequately covered by desk research but it would be hard to justify study visits. A compromise position would be to track key conferences in Asian and

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[5] See http://www.jiscinfonet.ac.uk/ and in particular http://www.jiscinfonet.ac.uk/InfoKits/effective-use-of-VLEs/managing-for-sustainability/man-sust-cultural-risksbenefits.

[6] See in particular the pages http://elearning.heacademy.ac.uk/wiki/index.php/Methodologies_Index and http://elearning.heacademy.ac.uk/wiki/index.php/Countries.

[7] See http://wiki.cetis.ac.uk/CETIS_Wiki.

American regions and attend when desk research on each conference indicated that there were interesting papers.

The nature of Tasks 3a and 3e is that they cannot be covered with desk research but only by a case study approach involving visiting key institutions. Task 3a is clearly the priority but if funds permit then a study visit to Australia (around 3 weeks maximum) should deal well with Task 3e, including some contact with the TAFE sector not only HE. (It is doubtful whether there is value in a side-trip to New Zealand – e.g. to the Open Polytechnic – but it cannot be ruled out – desk research will clarify.)

Task 3a would be done in a standard case study approach. It is likely that, just as with the CNL case studies, the institutions would wish the case studies to be anonymous and not published. (Modern experience with case studies shows that institutions remain as sensitive to full disclosure as they were in the CNL era of 1999.) At least seven case studies would be required to give triangulation and anonymisation, and each major e-learning initiative should be looked at, perhaps via an initial pass of a brief survey.

4. Prioritisation against funding profiles

Three ranges of funding profiles were given:

    a. £10K-£20K

    b. £50K-£75K

    c. £100K-£150K

To make the calculations both simpler and more realistic we take in each case the top of the range and map it into effort days by using the JISC standard maximum consultant rate of £500 per day, excluding VAT but including UK travel and subsistence (for ease of calculation).

This gives us the following bands:

    a. £20K – 40 days

    b. £75K – 150 days

    c. £150K – 300 days

It should perhaps be first noted that some small initiatives are almost cost-free, in particular publishing the Report behind this discussion paper and reinstating some of the missing links (e.g. to CNL) on JISC infoNet.

4.1 Low-band: £20K – 40 days

For this sum one cannot achieve any useful progress on a new methodology but one can achieve a comprehensive infobase on the leading methodologies that would form the basis of any modern methodology. Assuming some set-up and QA work one could assume a tariff of 3 days per methodology across 10 methodologies including for each, some analysis and cross-comparison. (Any barrier to editing such as a hard to use content management system renders such tariffs unviable – another reason for using a wiki.)

A ruthless pruning of methodologies to those both public and likely to be very relevant to the UK (thus ruling out Flashlight, TCM etc) could reduce the methodologies analysed in detail to around 5 and thus give more depth of analysis and an overall summary – but I recommend that "stub" entries are created for each methodology, using a version of the template used in the Report (Annex B).

Due to the mass of material to be studied and the limited time to do it in, the work can be contracted out only to a costing expert; and given issues of "neutrality" the pages would have to have a refereeing process both within the project and from the methodology owners.

4.2   Mid-band: £75K – 150 days

This band gives a further 110 days. For this tariff one can certainly set up a team to develop a new methodology. As a comparator, the time that I took to set up the Pick&Mix benchmarking methodology (brand-new but grounded in the literature) was around 3 person-months, say 60 days. One should reserve 10 days for some desk research to deepen the scoping exercise work done here, leaving a tariff of 100 days for the methodology.

There is a lot of experience in and around Sero in the human dynamics and people management skills required to set up and run such teams to create and run such toolkits – from such tasks as the PCDL e-maturity survey for Becta, DSA for the SFC, TILE for JISC[8] and other work (as yet confidential) for agencies on benchmarking/maturity surveys and critical success factors. The general principle is to have one key person and a small number of advisors contracted in if necessary (and paid) and then an outer Advisory Group who are reimbursed travel and subsistence only.

One should certainly consider taking two or three of the main costs of e-learning people (i.e. almost all there are in the UK) and seeing if they would work closely together in the inner team to create a synthesis – interesting issues to discuss are whether the team leader should be an expert or not an expert but a good project manager and team manager.

There is a sector political issue on the composition of the team and the Advisory Group. Based on earlier work analysing major e-learning initiatives (those with many e-learning-rich programme offerings) in the UK in HE and FE and from current work in Wales, it is likely that with some exceptions (such as Liverpool, Leicester and London External in England, Heriot-Watt in Scotland, Glamorgan in Wales and Ulster in Northern Ireland) the majority of early adopters of any new costing methodology in HE are likely to be from the English new university sector: such as Derby, Staffordshire, Middlesex, Brookes, Herts etc. – as was the case in for those who succeeded in the JISC Curriculum Design call – and there will be relatively few for FE (though there will be some (including in the Technology Exemplar Network such as Cornwall College – plus a couple in Wales) This does have implications for the "tone" and nuancing of any methodology proposed, especially when it come to work planning and decision-making (this was clear from benchmarking work) – and is a factor which may not have had sufficient attention in some earlier JISC work in this area. In particular it suggests that if effort has to be pruned then the initial client base should be English HE and thus with an orientation to the overarching TRAC(T) approach.

4.3   High-band: £150K – 300 days

This band gives a further 150 days. The aim would be that within the top amount **all** the tasks could be done. In particular the following additional tasks can be carried out:

- Nuancing of the new methodology to English FE and the overarching FFE (Framework for Excellence) including piloting with two FE colleges: 45 days

- Further evidence-gathering as noted below to total 105 days:

  a. in parts of the Russell Group, in Scottish HE and in Welsh FE – a set of 7 case studies at 5 days per study and synthesis report of 5 days making 40 days

  b. in certain relevant EU/EEA countries (Finland etc) – 10 days (may have to include one or two visits)

  c. at the EU programme level – 10 days (including a trip to Brussels)

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[8] For PCDL see http://www.sero.co.uk/becta-pcdl.html and http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/ematurity_pcdl_summary.pdf.

For DSA see http://www.sero.co.uk/sfc.html.

For TILE see http://www.sero.co.uk/jisc-tile.html,

d. in some key countries outside Europe (e.g. China, Middle East/Gulf States, etc) – 20 days for desk research and to attend key events

e. in Australia at the detailed non-public level – a 3-week study trip to Australia and perhaps New Zealand – notional tariff including travel and write-up of 25 days.

An alternative approach which is **not** recommended is to set up a parallel team to develop a second-source methodology. That should only be considered if funds are available above and beyond £150K, and after a SWOT analysis of the issues (including the potential confusion raised between methodologies).

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