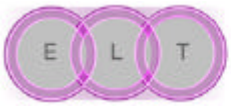

Embedding Learning Technologies

Lessons learned (June 2003)

At the end of each of the four years of the EFFECTS project an evaluation forum has been held to identify lessons learned in working towards the project goals. All members of the current project team attend, along with some previous members of the project team, participants on EFFECTS programmes, representatives from partner institutions and external evaluators. The following represents an updating of the lessons identified during the lifetime of the project, in the light of the final evaluation forum in June 2003.

1. Embedding learning technologies into the curriculum

As a project we cannot claim to have collected much evaluation data on how students learn with technologies, but we have empowered individual staff to evaluate, reflect and be critical about their own practice. Our case studies offer a range of evaluation outcomes that are, in common with most work in this area, very local. Having worked with a wide range of academic staff to embed learning technologies, however, we believe the following to be generally true.

1.1 The project begins from the premise that any technology – old or new – should be employed in the service of specific learning and teaching goals, rather than as an end in itself.

1.2 However, staff can only make effective decisions about the appropriate use of a technology once they are familiar with its use, understand its specific affordances for learning and teaching, and feel confident enough to adapt it to their own professional goals. Acquiring familiarity-in-use has time implications for both staff and students, and this needs to be acknowledged when planning student learning sessions as well as staff development.

1.3 With over-familiarity, technologies can become 'invisible' and therefore difficult to use in innovative ways. Examples would be the lecture hall and overhead projector. Effective embedding of learning technologies is carried out by staff who are critical, creative and innovative in relation to the new technologies, as well as confident in their use. In other words there is a balance to be achieved between familiarity and contempt.

1.4 'Top-down' introductions of new technologies, or training which is not informed by an awareness of the educational opportunities and in which staff are not encouraged to be innovative, can lead to unthinking adoption in which effective new educational practices do not emerge.

1.5 EFFECTS learning outcomes 1-3 (review, analyse and plan/design), if appropriately supported, are achievable by most members of staff and provide a sound basis for embedding learning technologies into the curriculum (outcome 4).

1.6 Most staff lack the confidence and methodological tools or discourses to undertake educational evaluation, critical reflection on practice, or writing for learning and teaching publications (outcomes 5-7). There is some evidence that staff may move on to these activities in a second development 'cycle', i.e. having used a new technique or technology at least once to support student learning.

1.7 These 'second cycle' activities require the support of expert development staff with an understanding of evaluation and critical reflection, an awareness of current issues in learning technology research, as well as sound knowledge of the specific affordances of new technologies for learning and teaching.

1.8 The main barriers to embedding of learning technologies, from a staff perspective, are:

- Lack of credible professional incentives for learning and teaching innovation (e.g. career enhancement, RAE credit for learning technology publications)
- Lack of time and high workloads, with a perhaps exaggerated perception of the time required to become familiar with new technologies and techniques
- Lack of confidence and experience with the relevant technologies
- Lack of models of good practice such as local mentors or relevant, high quality case studies
- Lack of a culture of development, evaluation, action research and reflection in academic teaching and learning

- Poor access to support staff, or a lack of support staff with the relevant technical, educational and evaluative skills
- Lack of strategic support from institutional and (especially) departmental management
- Status of learning technologies in relation to other local priorities (e.g. QAA, RAE, Widening Participation)
- Change weariness and mistrust of 'new' agendas

2. CPD for learning technologies

(a) program philosophy and design

2.1 ELT programs are designed to be progressive, enabling all participants to advance their learning technology awareness and development. This might mean, for example, progressing from use to familiarity-in-use, becoming more effective at supporting student learning, becoming a critical practitioner and change agent, or undertaking educational research and evaluation.

2.2 The EFFECTS (now SEDA ELT) learning outcomes provide a sound framework for the design of programs to support embedding learning technologies into the curriculum. They have been proven across a wide range of different institutions and disciplines, and for participants with different starting levels of familiarity with learning technologies.

2.3 The EFFECTS (now SEDA ELT) professional values are designed to ensure that all programs are underpinned by a common concern for the quality of student learning. Program developers should design CPD opportunities with the aim that they:

- be progressive and developmental;
- promote collegiality and collaboration but value diversity;
- develop people who can cascade expertise to others;
- provide appropriate recognition, validation and reward for the effort invested in development;
- promote the scholarship of learning and teaching including the values of peer review and critical reflection; and should aim to raising the status of learning technology work within the academy.

We have learned, however, that these are ideals towards which programmes can only advance as fast as the prevailing institutional context will allow.

2.4 Specialist CPD for learning technologies can be effectively organised around an action research/action learning model, in which participants set their own learning objectives, plan their own curriculum development project, and adopt a critically reflective/evaluative approach to their work. This approach is likely to be of most interest to learning technology specialists, and learning and teaching enthusiasts and innovators.

2.5 An alternative model is to embed learning technologies into ILT and other initial professional development courses for academic staff. The advantage is that the use of learning technologies is seen as an aspect of mainstream teaching practice rather than an arcane specialism. However, there is rarely time within the context of such courses for staff to demonstrate all the skills required by the seven EFFECTS learning outcomes.

2.6 The two approaches – an integrated learning technologies strand to teacher accreditation, and a specialist embedding learning technologies module – can be mutually supportive. For example:

- outcomes 1 to 3(4) may be taught in an integrated fashion, with only those choosing to specialise in learning technology development going on to complete outcomes 4(5) to 7;
- participants on the specialist module can become learning technology mentors and advisors to staff seeking accreditation;
- common materials and workshop sessions can be developed, although the taught sessions may remain separate;
- an accredited specialist module requires staff to be developed or recruited who can support the EFFECTs learning outcomes, and who can then offer high quality support to the learning technology elements of the ILT program;

2.7 Timing of professional development opportunities within the academic year is important.

2.8 While roll-on-roll-off programmes provide flexibility to participants, there are undoubted benefits to periods of more intensive learning and to learning in a cohort. This is also less demanding on programme tutor time and helps participants maintain progress towards the learning outcomes. Therefore most EFFECTS institutions have opted for a series of workshops – often during vacation periods when staff have fewer immediate demands – followed up with tutorial support during project implementation, evaluation and writing up.

2.9 Workshops on specific learning technology issues can usefully be opened up to all staff, with ELT participants playing a central role (perhaps presenting their own project work). Workshops to support the development cycle, promote reflection and help build evidence for the learning outcomes can be confined to program participants to ensure a supportive and familiar environment.

(b) program content and delivery

2.10 Currently most EFFECTS programmes support practitioners with guidelines and toolkits to help them evidence the learning outcomes. With more experienced practitioners – and arguably also at more research-led institutions – individual supervision and tutorial-type meetings or learning contracts may be more appropriate to help participants develop original approaches.

2.11 Structured tasks based around interactive documents or templates can be useful to help participants build portfolios, particularly where they lack the interest or experience to write an academic paper. It is important that these structured activities and templates do not become ends in themselves – they must be seen as supporting the action learning cycle, rather than as externally imposed assessment tasks.

2.12 Reflection on practice is an essential element of ELT programs. Participants should be encouraged to reflect on their own use of learning technologies, and in time to reflect on the wider practices of their department, institution or subject area. This secondary level of reflection will involve reading, asking questions and critically reviewing other people's practice.

2.13 It is important that the methods of delivery in ELT programmes support participants' growing familiarity-in-use with the technologies that they will be embedding.

2.14 Most programs make use of a web site or virtual learning environment and provide online communication opportunities to participants. However, particularly where they lack confidence with learning technologies, participants often prefer face-to-face communication. Optional (non-assessed, non-critical) online support will rarely be used by participants with many other demands on their time.

(c) assessment

2.15 A range of assessment formats are available within the ELT framework. The two main formats used are:

	Advantages	**Disadvantages**
(1) Portfolio of evidence with reflective commentary	• May be useful for other professional development purposes • Emphasises reflection • Likely to be familiar from ILT and SEDA courses • Relatively easy to monitor progress and assess against outcomes	• May be unfamiliar to lecturers who have not taken an ILT/SEDA course • Risk of box-ticking exercise •May underplay research agenda and scholarship of teaching • May therefore be undervalued as an outcome in research-oriented institutions
(2) Case study	• May form the basis of a publication and therefore offer academic recognition • Emphasises evaluation • Likely to be familiar from academic research activities (especially in social sciences) • Useful for dissemination to others	• May be unfamiliar to non-social-scientists • May underplay the value of reflecting on evidence • Requires mapping to learning outcomes and may therefore be more complex to assess • May be difficult to evidence all the learning outcomes

2.16 Hybrid formats have also been used successfully, for example a case study with additional evidence, a portfolio of which a case study forms a major portion. Ideally, programs should be flexible in recognition of the fact that different outcomes will be useful to different participants. Innovative formats might also be encouraged: for example participants might choose to produce a web site or CD-ROM.

(d) support

2.17 Specialist learning technology CPD demands targeted, relevant support, in the form of:

- Technical support - often provided by staff not directly involved with the CPD programme
- Pedagogical support - advice on pedagogically sound uses of the available technologies
- Process support - scaffolding of the skills and activities required to meet the learning outcomes
- Personal support - i.e. mentoring, to help participants deal with non-technical difficulties arising from their development projects

2.18 The main challenge is integrating support structures and existing staff/educational development roles to provide all these elements in a timely way.

2.19 Participants on ELT programs can become supporters of other staff, for example by:

- inviting them to give lunchtime presentations of their development work;
- exploring routes by which the outcomes of individual curriculum projects can feed back into departmental and institutional policy on learning technologies;
- developing routes to professional advancement, e.g. teaching fellowships, which take account of learning technology expertise;
- providing funds to buy out academic staff time for pursuit of learning technology related projects.

2.20 However it is important that enthusiasts do not automatically become the person in their department to whom other staff turn when they need help with technical issues. This is a clear disincentive to gaining expertise in the learning technology field, *and is inevitable without effective technical support.*

2.21 It can be difficult to recruit people with the expertise to develop, deliver and support EFFECTS courses. Such individuals need plenty of CPD, many of which will only be available outside the institution, and may also value opportunities to carry out their own research and development.

(e) participation

2.22 Publication and academic recognition are generally more attractive rewards than academic credit for experienced members of staff, though academic credit may be more significant to new staff (particularly in post-92 institutions) and for non-academic or academic-related staff.

2.23 Effective approaches to recruiting participants include:

- targeting new lecturers who have recently completed an accredited initial training programme;
- targeting a specific department or faculty where learning technology is particularly favoured;
- offering participants the opportunity to bid for money from a learning technology projects fund;
- building the programme around professional development for a specific new technology or environment (e.g. the implementation of a managed learning environment);
- offering ‘taster sessions’ where staff have a chance to try new technologies or approaches for themselves;
- holding ‘showcase’ events where participants can demonstrate their achievements to other staff.

2.24 Programme features which are particularly attractive to staff are:

- just-in-time training (e.g. to solve specific learning and teaching problems or introduce specific new technologies);
- relevant examples of successful embedding (case studies, show cases);
- a positive institutional vision of what can be achieved;
- publication opportunities;
- flexibility of attendance;
- one-to-one support.

2.25 The ELT framework allows different participants to pursue different outcomes at different levels of achievement, and appropriately to their own specific roles. Institutional programmes need to be similarly flexible, even if local cultures and agendas favour particular outcomes.

2.26 Different types of participant may engage differently with CPD: there will be the dropper-in, the workshop junkie, the tryer-out, the person-who's-done-it-all-already, the reflector, the change agent… Taking a concerns-based approach means recognising how individuals work out their identity and role as they engage in CPD, and evolving a repertoire of supportive techniques for participants with different starting points and aspirations.

2.27 At present a range of hybrid roles is developing in the area of learning technologies: academic-developers, academic-technologists, technologist-librarians and so on. Many of these roles are undervalued and underpaid. Unfortunately, participation in an ELT-type program can actually catapult people out of more secure (if perhaps unfulfilling) roles into one of these hotspots. Developers have some responsibility to continue working with people who have been 'developed' in this way, to articulate more clearly the nature and value of learning technology work.

(f) embedding programmes into institutional culture

2.28 We believe that participants on ELT programs should not be asked to uncritically adopt local learning technology policies or accept the available learning technology infrastructure. As innovators, they are valuable sources of information and influence about how policy and infrastructure should develop.

2.29 Institutional accreditation of staff/educational development programs is valuable in drawing down resources for support of participants, providing internal quality assurance, and raising the scholarship of curriculum development. It is most successful as part of a postgraduate certificate, diploma or Masters in an education-related subject. However, accreditation is seen as a means rather than an end in itself.

2.30 It is worth exploring mechanisms for tying in the CPD requirements of ELT with institutional resources for embedding learning technologies. For example:

- LTS resources could be made available to support curriculum development projects within the context of ELT;
- bids to internal development funds can be viewed more favourably if bidders have undertaken or intend to undertake appropriate CPD;
- an ELT workshop could be used to help participants develop credible bids for internal funding;
- ELT materials could guide staff through accessing institutional resources (especially support staff);
- teaching fellowships or sabbaticals could be awarded with an eye to whether participants will use the additional time for a specific curriculum development project.

2.31 Where possible, ELT program objectives should be aligned with the objectives of the institution's Learning and Teaching Strategy. Other strategies from which funding and/or support can be secured for learning technology-related CPD include the Human Resources Strategy and the Information Strategy.

2.32 The ELT learning outcomes can also be used as a framework for supporting individuals and groups of staff through small-scale development projects, without being explicitly identified as professional development. Most members of the EFFECTS team feel, however, that the learning cycle, learning outcomes and developmental philosophy should be made transparent, even if individuals decide to use the framework in a purely instrumental way.

2.33 Staff and educational development is becoming a more mainstream activity within the academy and has taken on many aspects of a managerial agenda e.g. benchmarking, quality assurance, business process reengineering, instructional design. There are opportunities for learning technologists to influence the strategic agenda through this close alignment with the interests of management.

2.34 There is also however an alternative philosophy of development which urges teachers to question their practice rather than training them to implement a specific agenda. This does not always sit well with teachers' own perceived needs for just-in-time training, or with the necessarily more conservative agenda of professional bodies such as ILT. Whichever approach they adopt, developer should be critically aware of and reflective about their own practice.

3. Effective approaches to institutional change

3.1 Institutions are becoming more prepared to invest in staff expertise as they invest proportionately more in the actual technology (e.g. managed learning environments). It is important for learning technology specialists to be active in working parties and committees that make decisions on the implementation of new systems, as well as on effective staff and educational development.

3.2 Staff training and development for using new technologies must incorporate a consideration of educational issues. A culture of innovation and experimentation, as well as learning from more experienced users of the technology, is essential if effective new educational practices are to emerge.

3.3 The most effective use of learning technology by academics happens when the department has a supportive culture, i.e. where Heads of Department actively prioritise innovation in learning and teaching. Institutional mission statements are no use unless there are mechanisms for translating them into strategic priorities and resource allocations at this local level.

3.4 It is essential to communicate successes to other staff and to the university management, e.g. via a special publications and web sites, exhibitions, a 'technology term', 'student centred learning week' or similar. However, communications of this kind need to become iterative and feed back into institutional decision making.

3.5 Lack of time and funding and poor infrastructure remain serious incentives to innovation and should where possible be linked together e.g. in small-scale funded development projects. There is the added advantage that funds are better spent if the staff who receive them are well supported in embedding learning technologies. However, competitive bidding processes alone cannot make learning technology development a mainstream activity.

3.6 An ELT program increases the demand for qualified, educationally-aware support staff. Although academic staff with learning technology skills are invaluable mentors to others in their department, they should not become a substitute for other forms of support or they will become overworked and may actually have their status downgraded by their new expertise.

3.7 There is an interesting issue over whether centralised development teams provide most effective support for learning technologies, or whether responsibility should be devolved to departments, drawing on a range of local and central support as needed. Both models can be found in EFFECTS and ELT institutions: they have different implications for the development of academic and non-academic professional roles.

3.8 Institutional timing is crucial. At partner institutions the average time between first exposure to and take-up of the framework seems to be about 2 years, suggesting that even the best ideas need to be seeded and re-seeded before they find a niche in which to grow.

3.9 Institutional development requires progress on a large number of issues simultaneously (technical infrastructure, learning and teaching culture, reward systems, staff development, support staff, research and development...) and different factors will be limiting development at any one time.

3.10 Effective embedding of learning technologies requires collaboration among staff in different areas of the institution. Short-term alliances such as multi-role project teams can pave the way for longer-term contacts and networks. However, there are currently few formal structures for recognising and rewarding this kind of cross-boundary collaboration.

3.11 The main barriers to institutional change appear to be:

- Weaknesses in technical infrastructure (usually lags well behind the ambitions of the most forward-thinking staff)
- Long lead-in times for technical developments and roll-outs (means that learning and teaching innovations are put 'on-hold' as the technology available is about to become obsolete)
- Failure to involve learning and teaching staff in discussions about the development of technical infrastructure
- Failure to recruit and develop educationally-aware learning technology professionals to support academic staff effectively
- Ongoing uncertainty for learning technology professionals (location, resourcing and remit of relevant units; contracts, promotion opportunities and terms of employment for individuals) leading to brain-drain
- Lack of good communication structures (local and institutional) to enable dissemination of good practice and to allow feedback from innovators and developers into institutional decision-making processes
- Poor integration of initiatives – a multitude of new agendas without much central direction or focus ('howlround') leading to change weariness among staff
- Unsupportive local and central management – failure to prioritise or properly fund learning and teaching innovation is more common than active hostility; gaps between central policy and departmental implementation/resourcing strategies are particularly common

- Failure to link available innovation funds with CPD, which would mean that funds were better spent (and provide incentives for staff to engage in CPD)
- Failure to recognise and integrate the work of externally funded projects
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4. Building shared resources and networks

(a) Resources

4.1 There is a demand from institutions seeking to develop ELT programs for:

- examples of programs from other institutions – their history, rationale and documentation
- shared staff development materials from existing and developing programs
- help in reviewing program aims, objectives and structures
- help in preparing documentation and managing the institutional process of validation/embedding
- co-mentoring relationships with similar institutions

4.2 Expertise is the key resource for learning technologies, but it is difficult to separate this resource from the locale in which it is acquired and the actual people who own it. We have learned that it is often more effective to share ‘war stories’ about what people have done with learning technologies than to try to develop hard-and-fast guidelines or rules.

4.3 We believe it is possible for practitioners to learn from one another via resources such as the ELT web site. However, these resources need to be reinterpreted and reinscribed into new contexts. There is little evidence that practitioners will spontaneously adopt ideas from legacy resources into their own developing practice.

4.4 There are significant barriers to the sharing of resources such as course materials, where competition across institutions is a real factor. There was recognition by participants in the networks that ‘someone’ needed pro-actively to collate, develop, and initiate collaborative development of new resources, and that there should be formal arrangements and rewards for this work.

4.5 Potential providers of shared resources are working with a variety of motivations and contexts, and the format of their materials will reflect this – though with a tendency towards article-length papers with the potential reward of academic publication. Users, on the other hand, tend to prefer a searchable database of information, preferably in FAQ format, but at least in a highly standardised form. Again, this demonstrates a need for pro-active analysis, collation and interpretation of resources if they are to be useful to practitioners.

(b) networks

4.6 Project team members feel that the networking and sharing of good practice across a range of institutions has been an invaluable aspect of EFFECTS. However, such activities have not always been well promoted or resourced nationally.

4.7 Learning technology practice takes place at the interface of a number of other practices: institutional, educational and technical-developmental. Culturally, practitioners still look to colleagues in their own discipline for inspiration. Any network concerned with learning technology development will therefore have to be sensitive to its relations with these other cultures and networks of practice.

4.8 There are still many barriers at local level to participation in inter-institutional networks. People based in competitive departments and funded for their research efforts have no reason to collaborate. People working as change agents in learning technology or learning and teaching units are likely to see more benefits in collaborating with other institutions, but they are unlikely to be specifically funded or allocated time to do so.

4.9 We acknowledge that internal institutional networks can also be difficult to sustain. These are often informal and contingent, arising in response to specific local needs and initiatives. However, all collaboration with institutions lends itself to the development of personal contacts which can be sustained or reactivated as needed.

4.10 We note that the idea of regional meetings has been successful in some cases, demonstrating that people are prepared to travel limited distances to meet face to face with practitioners in similar roles to their own. Pro-active and committed individuals are needed to help develop a sense of community within a collection of what may be very different institutions.

4.11 There are also limits to the usefulness of regional networks. For program developers it may be more helpful to have contact with cognate institutions than with ‘the institution down the road’. Critical variables

include learning and teaching culture, the research agenda, the role of the ILT and SEDA, the culture of CPD and reflective practice, the history of involvement in the national learning technologies agenda etc.

4.12 Learning technology enthusiasts are often very well networked online, but may be less well networked regionally or locally. Practitioners tend to be more interested in the experiences of others in their subject area.

4.13 Regional networks in the HE context tend to focus on regional economic issues and widening participation. They do not generally link directly in to learning technology issues, though there is no reason why the connections could not be made.

5. Some other issues

5.1 The wide range of learning and teaching initiatives that came about during the lifetime of the EFFECTS project has meant constant reappraisal and refinement of project plans. The desire to respond to a rapidly changing national scene has sometimes conflicted with project goals that were fixed at the outset.

5.2 The requirement for standardised ‘case study’ outcomes from EFFECTS participants was in direct conflict with the rationale that participants should pursue their own personal objectives in undertaking CPD. It was also often in conflict with the demands of the masters programmes within which EFFECTS courses tended to be validated. Case studies have therefore taken a wide variety of formats.

5.3 On the other hand we recognise that standard format are helpful to users, and they can be supportive of participants who are uncomfortable with writing a research paper or case study. Structured guidelines and support from project officers has enabled the production of a higher number of case studies, but is somewhat at odds with the project philosophy to embed a culture of self-sufficient evaluation and dissemination practice. It may be that our expectations in this area were too far in advance of the prevailing learning and teaching culture(s).

5.4 Another lesson has been that people are more ready to talk about their practice with colleagues than to commit it to writing. In many cases this can actually be more useful as a means of dissemination and intervention within departments and institutions. However, it does nothing to advance the ‘scholarship of teaching’ or the body of disseminable learning technologies research.

5.5 Participants have been far keener to engage with the first three or four EFFECTS learning outcomes than to evaluate and write up their work. Pressures of time are most commonly given as the reason, along with a lack of incentive given that pedagogical research and publication are still very poorly regarded. This leads us to doubt whether further short-term funding for learning and teaching development will seriously impact on the research-led culture in UK HE.

5.5 One of the reasons for the (relative) success of EFFECTS, in the view of the project team, has been the educational development philosophy that has informed our activities. The entire process of the project has been a series of interventions in learning and teaching practice, and the outcomes have been the individuals whose practice has been changed by engaging with EFFECTS.

5.6 This philosophy and culture allowed the project to develop a very flexible framework for supporting practice, which meant people could buy in to the concept from quite different perspectives. Our focus on the human resource issues in learning technology was timely, with simultaneous interest from the ILT, ALT, THETO, the JISC and other bodies.

5.7 It is interesting that institutions now approach EFFECTS as a valuable entity in itself, as a set of resources and products. In fact what institutions need is each other, just as we needed each other at the outset of the project. This is why working with existing professional networks has been the focus of our continuation work.

5.8 We would like to record that one of the most important outcomes of EFFECTS has been the development of the individuals involved in the project team. We have encouraged one another to reflect, debate, theorise, experiment and push forward our ideas about learning technologies. Although almost all have moved on to new posts and new institutions, we have found ways of sustaining our discussions and of drawing other people in. These are important stories to be told about EFFECTS, and precious outcomes.

5.9 We believe more strongly than ever in the need to build overlapping communities of critical research, critical development and critical practice in learning technologies. While many of us have developed our own research profiles during the lifetime of the project, we are wary of perpetuating the separation between research and practice by focusing exclusively on the former. The need for critically reflective, questioning and empowered teachers in higher education has surely never been greater.