E-LEARNING SURVEY – PRELIMINARY REPORT

The Centre for Bioscience is currently undertaking a study to discover the current state of, and major issues in, e-learning with respect to the bioscience community. While there was once a time when more or less everything that could be done with Information Technology (IT) in teaching was being covered somewhere by one bioscentist or another, this is no longer the case; technologies have been developed swiftly over the years and the bioscience footprint on these is much smaller. This leaves us with a situation where the legacy e-learning applications fit less well into the current IT environment and the new alternatives offer a bewildering array of choices – virtual learning environments (VLEs), 3rd party online services, publishers online materials, online assessment technologies, open-source projects, e-portfolios, personal learning environments, podcasting etc. Therefore, we have chosen to survey the community on the current application of these technologies with a view to getting behind the scenes of the development process with follow-up case studies, as well as identifying where we can support the effective collaboration of similar projects.

This report is based on the initial stage – the survey of the community about their e-learning use and requirements in July 2006.

INITIAL FINDINGS

The first two questions compared the awareness and actual use of major e-learning tools. The highest responses were resources and course-management tools;

e-learning tool	Aware of	Actually using it
VLEs and MLEs	90% and 49%	68% and 24%
Email	96%	86%
Imagebanks	92%	59%
e-journals & e-books	93% and 89%	68% and 36%

As expected, all those aware (99%) of presentation software e.g. PowerPoint, actually used it in their teaching, most used VLEs or MLEs to manage online materials with email, imagebanks and e-journals & e-books[1] scoring well.

The next highest group appear to be more interactive and content based.

e-learning tool	Aware of	Actually using it
Online discussions	96%	50%
Online assessment	89%	50%
Simulations	87%	26%
Turnitin UK	49%	20%

This would imply institutions' IT infrastructure systems for managing learning are consuming most of the activity in the online learning experience. However, there is still capacity for specialist simulations.

The final, lower band included noticeable new arrivals online.

e-learning tool	Aware of	Actually using it
Blogs & wikis	70% and 49%	7% and 7%
Podcasts	72%	4%
e-Portfolios	52%	11%
Synchronous chat	80%	15%
JORUM	10%	1.5%
ReLOAD	5%	2%
TOIA	5%	0%

New web-technologies, principally blogs and wikis, are gaining a foothold in the short time they have been available but major initiatives from the JISC – JORUM, ReLOAD and TOIA are clearly finding it difficult to engage the bioscience community. It is likely TOIA competes with established assessment systems and JORUM (and consequently ReLOAD) have yet to be signed up in sufficient numbers to be useful (institutional registration is time-consuming).

Podcasts are being noticed and starting to make a minor presence, e-portfolios similarly, and synchronous chat showing a more substantial contribution.

Despite being established technologies video conferencing and web casts are infrequent (4% each) this may be because of limited distance learning opportunities.

MAIN REASONS FOR ADOPTING TECHNOLOGY

Respondents were asked to identify their main reasons for using e-learning (as multiple responses), and highest among these were:

- Flexibility of access 24/7 (80%);
- Ease of modification/update (64%);
- Control of the release of content (55%);
- Better able to meet student needs (54%); and
- Support for large class numbers (44%).

Student demand is still perceived to be reasonably high (61%). However, only few used it primarily to replace an expensive practical (10%) or felt forced into its adoption (20%). The common perception of e-learning being used mostly for saving time is only shared by 42%; supporting comments made by various contacts. Note the time saved is only in the delivery as the preparation is often resource and time expensive. Additional comments included the distance-learning provision and ways of communicating with groups efficiently.

BARRIERS

A clear and outright winner here is the **lack of time** for producing or introducing more e-learning (86%) into the curriculum, followed by a lack of incentive / recognition for staff (52%) to invest effort and resources into e-learning. The frequently changing technical environment disappoints many (28%) with 'lack of skill' being a barrier identified by a similar number (28%).

Clearly a community working together could make better use of scarce time by successful collaboration and/or the sharing of problems and solutions. The lifetime of resources is limited by technological constraints as well as pedagogically, the former being harder to plan for. More practical examples of successful adoption were requested (20%), more or better training (28%) and more collaborators with a common interest (21%). A lack of confidence, skills, policies and flexibility were raised in the additional comments along with suspicion of the pedagogic guidance received –

"The so-called pedagogical experts can be a barrier if they insist an e-learning activity should be designed and presented their way instead of presenting in a way that students respond the best to."

Successful collaboration depends upon common requirements and interests, with a consistent delivery environment for the final product. Web-based solutions offer this consistency where the browser is the delivery vehicle but the skill set required is likely to deter many unless a supporting network is available. Large-funded projects expect this skill set to be in place but the acquisition of skill needs a flexible approach to support some degree of risk taking to acquire these potentially valuable skills. Our Teaching Development Fund (TDF) is one mechanism for this.

Staff resistance and student unwillingness to engage (25%) appears to warrant further investigation in follow-up discussions in phase II.

SUPPORT

Most staff appear to have access to training (24% very useful, 71% sometimes useful) and these are generally regarded as up-to-date but many staff expect the training itself to identify which topics are currently in vogue. Only 10% felt training was not up-to-date. Further analysis of those showing dissatisfaction here shows most of these use local colleagues, or the Web, for finding further support.

Training courses are always available to 14%, leaving 82% occasional access and 5% no provision at all (staff may be teaching at the same time as the courses themselves are being offered).

The most popular method for getting support to implement e-learning is from a local colleague (75%), followed by local projects (32%) and other institutional colleagues (26%). Subject centres assist 24% with 16% using JISC initiatives. Only 3% required no support at all.

Educational technologists, IT staff local to the department and e-learning champions were often mentioned in the open comments as useful contacts necessary to implement e-learning.

IMPROVEMENTS

Updating the content (54%) and tailoring it to specific needs (44%) are the next types of improvement to existing e-learning needed, along with usability (44%). A minor but noteworthy proportion of respondents would like to upgrade to a web version of existing material (18%) with a similar number wanting to improve the access for the disabled student (20%). There were few (7%) not wanting to make any improvements at all.

'Improving the student learning experience' has so many potential options, not wishing to constrain responses open comment was invited. Within the 80 comments posted, variability, diversity and improved interactivity were cited along with increased adoption of online assessment. Motivation and engagement of the students is desirable but it is recognised in some comments students are "more 'techno-savvy' these days" and have higher expectations of e-learning materials. Such materials require more technically skilled authors and generally more development time to be competitive in the evermore sophisticated e-learning arena.

CONCLUSIONS

Time, time and more time is the community need expressed by most of staff. Unfortunately time constraints are not likely to diminish in an environment of increasing student numbers. Efficient solutions require local collaborators and subject-based communities of practice to be supported in common goals as well as technical solutions which are both modifiable and transferable. Email is not efficient for this type of project work and it is the successes in cross-institutional projects which form a core of shareable e-learning materials. JORUM is yet to establish a foothold and needs significant discipline-based support to bridge the gap. The Internet (outside education) is highly advanced and so if online delivery is used students expect to engage in attractive and focussed materials. Academic interest in the development of e-learning material is still high and the training is generally available but the opportunities to take them are still limited for many.

There are a number of different models of development of e-learning and its evaluation that can be investigated with follow up analysis. A series of case studies is currently on-going across the UK. The aim is to highlight a range of approaches, with their benefits and pitfalls, to assist the bioscience community to develop e-learning materials which can be shared, managed, updated, have components that re-used in many contexts and work as a medium for successful and enjoyable collaboration in the bioscience community.

E-LEARNING REFERENCE GROUP

Of the 151 respondents, 85 (56.3%) were willing to join the e-learning reference group and this should provide the Centre with information from a wide range of subject disciplines, institution types and implementation methods. We are currently considering how best this might be achieved. A simple email list is easy enough to set up but these are not necessarily the most productive for effective dissemination and discussion. We are investigating other technologies based on social networking to do this.

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[1] *One must suspect 'e-books' is a misinterpretation – probably online books through library services rather than a downloadable e-book purchased for a local PC or PDA.*