

Transforming the learning experience

Briefing Paper

September 2007

Managing the pace of change remains a significant challenge for institutions. New pedagogical approaches can evolve in isolated pockets within institutions and are not always embedded into wider institutional practice, or shared more widely across the community.

The Digital Libraries in the Classroom programme is examining how integrating recent technical developments with digital content can improve the learning experience of students. As summarised by Spoken Word Services, library methods are indispensable for effective scholarly communication. The programme also aims to provide new models for the classroom, including the impact of this integration on student achievement, retention and recruitment, and on institutional structures and practices.

Who is involved?

The projects, funded through a joint UK/US Joint Information Systems Committee (JISC) and National Science Foundation (NSF) initiative, are:

- **Spoken Word Services**
led by Glasgow Caledonian University, Northwestern University and Michigan State University in partnership with the BBC, exploring the use of digital media in the humanities
- **DialogPlus**
a partnership between the University of Southampton, the University of Leeds, Pennsylvania State University and the University of California, Santa Barbara, working in the geography discipline to create, reuse and deploy digital learning materials
- **Digital Libraries for Global Distributed Innovative Design, Education and Teamwork (DIDET)**
a partnership between the University of Strathclyde, Stanford University and Olin College, working in the design engineering discipline, enabling students to participate in international team-based online design engineering projects
- **Digital Anthropology Resources for Teaching (DART)**
a partnership between the London School of Economics and Columbia University in the discipline of anthropology, developing tools to help deliver complex concepts to students

Although the projects are based within discrete disciplines, most of their outcomes and outputs translate easily into other teaching situations.

What have the projects done?

Educational media alone do not influence the achievements of students. Media permit the delivery and storage of pedagogical messages, but do not determine learning. Research evidence shows that the use of emerging technologies in learning and teaching processes is not inherently better than traditional learning and teaching processes. However, evidence also supports the position that technology use in learning and teaching can be effective. These four projects have been led by teaching needs and not just the available technology.

Specifically, the four projects aim to:

- bring emerging technologies and available digital content into core learning and teaching across a range of disciplines

- develop and use innovative approaches in integrating technologies for the benefit of undergraduate teaching
- demonstrate how the pedagogical process needs to be adapted or developed to support the learning process when using technology
- examine the human and organisational issues associated with implementing new modes of teaching

What have the projects not done?

The infrastructure, traditions, values and methodologies of higher education institutions may combine to create massive inertia that impedes change. The projects involved in the Digital Libraries in the Classroom programme have been focused on learning needs, but have not sought to do away with 'traditional' teaching modes. Therefore, the programme has changed the way in which some subjects within disciplines are, and can be, taught, in particular through the application of 'blended' approaches. Further, the projects have not addressed institutional transformation from an administrative or organisational viewpoint, but have made changes to the way in which technology and digital resources are used in teaching.

Achievements

All the projects have approached the integration of technology-based teaching in the subject areas in which they were working in different ways; however, they have reached common realisations, which could be considered for adoption elsewhere.

Thinking about the needs of staff and students

All projects concluded that the adoption of an alternative method of learning or teaching should only be undertaken to meet an identified learning need or opportunity not currently being met adequately, for example, the need for anthropology students to experience what it is like to be in the field. All the projects carried out consultations with their staff to identify where these needs lay, and felt that this was essential to the process of approaching subjects that are being taught in different ways.

Further, the project results have shown that implementation of any alternative modes of teaching should always be contextual. No alternative method of learning or teaching will successfully be adopted unless it has demonstrable, clearly understood benefits for the learner and the teacher.

Course delivery

Involvement with Digital Libraries in the Classroom has led to significant changes in the way in which courses have been delivered at the partner institutions. With the support of the programme, staff were given an opportunity to experiment with different ways of teaching, for example, using online tools to demonstrate difficult concepts or online collaborative tools to encourage interaction between groups as well as provide support for students.

Staff at all the institutions involved have had the opportunity to reflect on the way they teach, the resources they use and how to get the most out of digital resources, blending online and classroom tuition. Although quantifiable benefits to students have been difficult to measure in the

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short term, they have reacted positively to the combination of face-to-face traditional teaching with some online delivery, and, in the case of DIDET, to working collaboratively in international teams, facilitated through the use of a wiki.

Team working

Team working has been key to the success of the four projects. Institutions should be aware of the need to be flexible about the model adopted for the management of relationships between teaching and learning technology staff. It has been confirmed that a level of subject-specific knowledge, such as that acquired by the learning technologists involved in the Digital Libraries in the Classroom projects, is vital to provide effective support for teaching staff.

Adaptation to new ways of working together in teams to deliver course content can, in some instances, be challenging. The programme has demonstrated that it is important to be responsive to and aware of local contexts in which personal circumstances vary and that this has a bearing on what can be achieved.

Content creation and reusability

Digital libraries and repositories facilitate reuse of digital content, potentially in different contexts. Although the projects approached their use of content in different ways, in each case it has become clear that allowing access to a range of resources to support the teaching of complex ideas, as well as encouraging students to take the resources and re-interpret them for themselves, has added value to the student experience.

A variety of content creation methods have been used in the projects, and some of the content is available for reuse. Spoken Word Services have a partnership agreement with the BBC which allows them to make audio and video from their archives available for educational use. The DIDET project has been creating content during the learning process, and has developed ways to share this with future cohorts of students; in this case both staff and students are able to create content. DART focused on creating learning content by using tutors' research materials, whereas geographers in DialogPLUS have been working collaboratively to develop a variety of learning activities and resources for reuse, called 'nuggets'.

How can other institutions adopt similar approaches?

Any institution wishing to instigate similar or greater levels of change needs to acknowledge that current work practices, such as didactic presentation of lectures, can evolve and change. This evolution should take account of new possibilities such as working in collaboration with learning technology staff to develop multimedia learning products. This could lead to the development of more collaborative and self-directed learning tools using technology likely to be more familiar to new cohorts of students than to staff.

Faculties and departments should be encouraged to appraise themselves of currently available alternative modes of teaching with a view to ensuring that they are addressing student learning needs as effectively as possible. This appraisal can be aided by collaboration of teaching staff with e-learning and learning technology staff.

Each member of an institution should have the opportunity to be innovative and creative in the application of new methods for individual and institutional goals. The university should encourage the adoption of new technology, through standards and guidelines, and must have enough organisational flexibility to enable this adoption.

However, institutions should be aware that the adoption of any alternative mode of teaching will always initially involve extra resources, effort and expense. Unless these demands are adequately supported, the impact of the innovation will be reduced and may fail. The projects in this programme were required to ensure that any changes made were sustainable after the end of the funded period. The Digital Libraries in the Classroom programme has shown that it is essential to instigate changes in a way that suits the structure, ethos and culture of the institution. The projects are currently seeking to transfer the methodologies and/or technologies to other subject disciplines.

This briefing paper has been written by Caroline Ingram (CSI Consultancy Ltd) on behalf of JISC.

Alternative formats of the briefing paper can be found at: www.jisc.ac.uk/publications

Further Information and Resources

The Digital Libraries in the Classroom programme:
www.jisc.ac.uk/whatwedo/programmes/programme_dlitc

Digital Libraries in the Classroom projects: a video
www.jisc.ac.uk/whatwedo/programmes/programme_dlitc/projectvideos

The projects in the programme were joint-funded by the NSF Digital Libraries Initiative 2
www.dli2.nsf.gov

Project websites

Spoken Word Services: www.spokenword.ac.uk

DialogPlus: www.dialogplus.org

DIDET: www.didet.ac.uk

DART: www.lse.ac.uk/collections/anthropology/dart.htm

DART at Columbia University: www.columbia.edu/dlc/dart

Project results

Scottish Funding Council transformation projects:
www.jisc.ac.uk/whatwedo/programmes/elearning_sfc

- BlendEd: www.blend-ed.ac.uk
- Collaborative e-Learning in the Life Sciences (CeLLS): www.cellproject.org
- E-Construction Transformation Project (ECTP): www.learnirectandbuild.com/Transformation/course5.htm

JISC programmes

Design for Learning programme:
www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy/elp_designlearn

Digital Repositories programme:
www.jisc.ac.uk/whatwedo/programmes/programme_digital_repositories

- RepoMMan project: Teaching & Learning and Administrator user needs analysis:
www.hull.ac.uk/esig/repomman/downloads/R-D12-TLA-user-needs.pdf

Distributed e-Learning programme:
www.jisc.ac.uk/whatwedo/programmes/programme_edistributed

- Regional distributed e-Learning baseline study:
www.jisc.ac.uk/whatwedo/programmes/programme_edistributed.aspx#downloads

e-Learning Pedagogy programme:
www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy

Information on models of practice:
www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy/elp_mod4l

Personal Learning Portal Pilot:
www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/kentplpp