

Background to the JISC circular 7/04 on Regional eLearning pilot projects around Distributed eLearning

Current regional initiatives

There are a number of current initiatives to encourage local and regional approaches to progression and widening participation.

Aimhigher

Aimhigher is a national outreach programme, primarily targeted at 13- to 19-year-olds, which aims to make it possible for many more people, especially those from under-represented groups, to enter higher education. It was formed as a result of the commitment in the White Paper *The future of higher education* to bring Aimhigher (formerly Excellence Challenge) and Aimhigher: Partnerships for Progression together into a coherent programme.

Aimhigher works at a local and regional level to bring partners together in order to reach out to schools and communities to encourage commitment to learning, to stimulate aspirations, to help raise attainment so that learners can realise ambitions. Key to this is working across the boundaries between school, college, higher education and work-based learning to break down barriers to access.

For further information on the Aimhigher initiative, see:

<http://www.dfes.gov.uk/aimhigherprogramme/>

Joint Progression Strategy

The Joint Progression Strategy is being developed by the Higher Education Funding Council for England (HEFCE), the Learning and Skills Council (LSC), and the Department for Education and Skills (DfES). This has a number of strands including measures to reduce administrative burdens on institutions, encourage flexible and innovative forms of higher education, and to encourage progression into, and through, higher education for vocational learners.

Lifelong Learning Networks

About 90 per cent of those on conventional A-level programmes enter higher education, but only 40-50 per cent of those qualifying at Level 3 in vocational subjects do so. Those who do enter higher education from vocational learning programmes often find that progression within higher education is also problematic. In order to address this lack of progression opportunities for learners on vocational programmes, HEFCE, the LSC and the DfES are developing Lifelong Learning Networks as part of the Joint Progression Strategy.

Lifelong Learning Networks are envisaged as groups of institutions, including higher education institutions and further education colleges, that come together across a city, area or region to offer new progression opportunities for vocational learners by:

- combining the strengths of a number of diverse institutions
- providing support for learners on vocational pathways
- bringing greater clarity, coherence and certainty to progression opportunities
- developing the curriculum as appropriate to facilitate progression
- valuing vocational learning outcomes and provide opportunities for vocational learners to build on earlier learning
- locating the progression strategy within a commitment to lifelong learning, ensuring that learners have access to a range of progression opportunities so that they can move between different kinds of vocational and academic programmes as their interests, needs and abilities develop.

HEFCE is currently exploring the scope for consensus in developing networks as 'demonstrators' or 'pilots' that build on local strengths, and which, across the country, test

different approaches. Consultation on these networks is currently underway with higher education institutions, further education colleges and other interested bodies.

For further information on Lifelong Learning Networks see:
http://www.hefce.ac.uk/pubs/circlets/2004/cl12_04/

Learning partnerships

Originally established in 1999 as Strategic Learning Partnerships by the DfES (then the DfEE), Learning Partnerships are now funded by the Learning and Skills Council. They are voluntary bodies bringing together a wide range of stakeholders including Local Educational Authorities, and are key partners with the local LSC in helping to develop policy and delivery practices. Their principal purpose is promoting provider collaboration in support of lifelong learning, and maximising the contribution of learning to local regeneration.

Regional Skills Partnerships

The DfES' Skills Strategy (July 2003) highlighted that there is a strong regional dimension to skills issues, and that responses at regional and local levels would be required to deal with these. It proposed the establishment of Regional Skills Partnerships aimed at integrating the work of the key agencies in each region, including the Regional Development Agencies, Small Business Service, Local Learning and Skills Councils, Jobcentre Plus and the Skills for Business Network. The DfES aims to have a Partnership established in each region by April 2005.

Information about the skills partnerships in each region can be found on the website of the relevant Regional Development Agency.

Technologies which JISC has been exploring

In order to facilitate and support interoperability, projects should work within the eLearning Framework and adopt a service-orientated approach (see below), using open standards and specifications. Where possible, projects should also make use of existing JISC-funded developments and work closely with other projects.

However, it is recognised that these pilot projects are functioning in the real world and must aim to deliver benefits to learners within the limited timescale available. It is therefore accepted that a pragmatic approach must be taken, but this should aim to **work within a service-orientated approach and the eLearning Framework** where practicable. For an example of a project which has done this, see the LeAP Project Case Study on implementing web services in an education environment from the Tasmanian Department of Education. This case study is available at:

<http://www.education.tas.gov.au/admin/ict/projects/imsdoecasestudy/default.htm>

The rest of this briefing documents provides an overview of, and pointers to further information, on the JISC activities which are most likely to be of relevance to the distributed eLearning regional pilot projects. Institutions may also want to consult the JISC website for information on activities in other areas.

eLearning Framework

The eLearning Framework is an international initiative that aims to make it easier for organisations to build eLearning systems from a defined set of components. The partners currently involved in its development are JISC, the Australian Department for Education, Science and Training, and Industry Canada.

The eLearning Framework adopts a service-oriented approach, which means that each component within the system is defined in terms of the services it provides to other components within the system. For example, a student record system component might provide services which enable other components such as a discussion forum to check students' email addresses, and find out which students are registered for given courses.

To permit each component to provide and use services in this way, standards are used to define how each service should work: what commands can be issued to it, and what format the reply should come in. As long as a component provides the standard services, the technology used to build the component itself is irrelevant to the system as a whole. Work on defining these standards for each service is ongoing, and necessarily progresses through organisations testing out implementations of the services and feeding back into the definition process based on their experiences.

The services defined within the eLearning framework are intended to map to the business process of educational institutions: things that actually happen in the real world of learning and teaching such as carrying out an assessment, marking, or authoring an activity. These services are sufficiently granular that they can be combined in different ways which match the way things are done in different institutions. In this they contrast with the traditional VLE, which provides a large number of services in an integrated way, and can be inflexible about how these are combined.

The eLearning framework is envisaged as a vision of how highly configurable eLearning systems can be built, which fit the institution, the pedagogy, and can work with existing technological constraints. Since it is highly modular but tightly defined, components can be swapped or upgraded without affecting the system as a whole. In this way, institutions can make use of new components developed by other institutions or by commercial or other suppliers as they become available.

The eLearning Framework is a work in progress, and many of the component services are yet to be fully defined. For an overview of the current state of development of the Framework (at June 2004), please see *An eLearning Framework: a summary* at: http://www.jisc.ac.uk/uploaded_documents/elf-summary7-04.doc

Further information on the Framework is available from the JISC eLearning Programme: Tools and Framework page at: http://www.jisc.ac.uk/elearning_framework.html

Toolkits

In order to make it easier for organisations to build components which provide and use services within the Framework, JISC is funding the creation of a number of open source toolkits. The toolkits currently under development are in the areas of:

- Enterprise web services and timetabling
- Search, aggregation and resource listing
- Personal development planning
- Activity management and learning design
- Embedding Connect.ac.uk services within institutional portals¹
- Resource discovery
- Sequencing and content packaging
- Assessment

The current round of development projects will finish in October 2004, and the regional pilot projects are encouraged to use the resultant toolkits. For further information on these projects, see the eLearning Tools and Framework page at: http://www.jisc.ac.uk/elearning_framework.html

¹ Connect aims to bring together information, resources and community building opportunities for further and higher education. These are provided in the form of portal services that can be found in one site, or can be individually embedded in the sites end users frequent. Services are being built in clusters to support: information and resources; communities and networks; and research and development. Further information is available at: <http://www.connect.ac.uk>

eLearning tools for learners and teachers

A number of development projects to create tools for learners and teachers are beginning in September 2004, as part of the distributed eLearning strand. These projects are in the main using a broadly service-oriented approach within the eLearning Framework. Tools are being developed in the areas of:

- Collaborative work
- Annotation
- Personal learning environment
- Multimedia authoring
- Discussion environments
- Assessment
- Designing and sequencing learning activities
- Content packaging
- Web logs
- ePortfolios
- Pedagogical resource bank
- Personal development planning
- Supporting placements
- Case study authoring
- Supporting the marking process

Details of these projects will be available from the distributed eLearning page of the JISC website in late September. This page can be found at:

http://www.jisc.ac.uk/programme_edistributed.html

These development projects will finish at the end of March 2005, so their outputs are likely to be available for the pilot projects to build on. Bidders for pilot projects who would like to make use of the outputs of one of these projects should indicate this in their proposal. The distributed eLearning team at JISC will then work with successful projects to develop a detailed technical plan once the outcomes of these development projects are known.

These tools are envisaged as eventually working within a 'personal learning environment', enabling learners to access resources and manage all their learning in one place, whether this is formal, independent or work-based learning. For further background on the concept of the personal learning environment, see *Application & tools component frameworks* at:

http://www.jisc.ac.uk/uploaded_documents/Application%20Component%20Deployment%20Framework.doc

Shibboleth technology for access management

JISC has been exploring the use of Shibboleth technology to facilitate access management: the complicated systems of authentication, rights and permissions which permit individual staff and students to access and share a wide range of resources over the web. The goal of this work is to provide a common system which removes the need for users to obtain and remember usernames and passwords for each resource bank or learning environment.

Shibboleth is an open-source, standards-based system which enables organisations such as universities and colleges to exchange information about their users in a secure manner. It preserves users' privacy by only passing information about relevant attributes, such as which institution or faculty an individual is a member of, or what type of staff, rather than their personal details, so that access can be granted to relevant resources. Individuals log in and are authenticated locally, by their own institution (the 'origin' site), and then the relevant attributes are passed to the remote site at which the resource is located (the 'target' site). In order for this to happen, both institutions must be within a trust 'club', which has agreed to respect each other's authentication processes.

Shibboleth can therefore support a range of access scenarios, including access to internal resources (e.g. exam papers), and access to third party resources (e.g. e-journals). Of particular relevance to the regional pilots is its suitability to support stable, long-term inter-

institutional resource sharing between defined groups, and it is this which we would like to invite projects to explore under the current call. In this situation, institutions are sharing resources or learner information with each other, but still wish to protect these resources/information from external parties. They would therefore be acting under the Shibboleth framework both as a user (origin site) and a resource provider (target site).

Consortia of institutions within the regional pilots may implement and trial the Shibboleth technology for uses such as:

- Enabling students from a partner institution to access certain areas of your institutional VLE or content repository.
- Enabling students from different institutions to collaborate and share resources in a secure environment.
- Addressing the requirements of students that are members of multiple institutions.

It is envisaged that additional funding of up to £40,000 per consortia will be available for pilots wishing to explore the use of Shibboleth. This will be confirmed at the regional town meetings. If you wish to take advantage of this, please clearly describe how you envisage using Shibboleth within your proposal and mark expenditure on this effort separately within your budget.

Further information on the Shibboleth initiative is available at:

<http://shibboleth.internet2.edu/shib-intro.html>

JISC has already funded a range of projects investigating Shibboleth's potential and improving its application. Information on these projects can be found on the JISC website at:

http://www.jisc.ac.uk/programme_middleware.html

Institutions should note that JISC will also be separately funding individual institutions that wish to become 'early adopters' of Shibboleth in a more traditional setting (e.g. for access to internal and third-party library resources), as well as resource owners (e.g. academic publishers) who will make their resources accessible via Shibboleth. For more information, please see the Expressions of Interest information on the JISC website:

www.jisc.ac.uk/index.cfm?name=form&formid=2904348329

Tools for content sharing and reuse

A number of tools which make it easier for staff and institutions to share learning materials have been developed under the Exchange for Learning Programme. Information on the programme as a whole is available at:

http://www.jisc.ac.uk/programme_x4l.html

JORUM is a learning object repository, which stores and provides searchable access to learning objects: small, self-contained eLearning resources which support a single learning objective. It includes a development bay, which provides an environment for the repurposing existing learning materials. The JORUM is intended to be cross-discipline and to enable learning and teaching staff to upload and search for a wide range of different types of materials, from lesson plans or pointers to useful resources to complex animations or simulations.

JORUM is currently under development, and is scheduled to be fully open to all further and higher education institutions by August 2005. Opportunities may exist to make use of a trial version of the service before this date. Projects which wish to do this should make this clear in their proposal.

Further information on JORUM is available at:

<http://www.jorum.ac.uk>

The RELOAD project aims to provide a suite of tools which will help teaching staff create, view and manipulate learning objects and activities which conform to learning technology interoperability specifications.

These specifications, such as the IMS and SCORM Content Packaging specifications, are designed to permit learning objects created within one system to be loaded into any system which complies with the specifications.

The RELOAD tools provide the "missing link" which allows users to author, adapt, and transfer learning objects, in specification compliant format, between authoring and design tools (such as Macromedia Dreamweaver), local and distributed digital repositories (such as the JORUM), and learning management systems or VLEs such as WebCT and BlackBoard.

Further information on RELOAD is available at:

<http://www.reload.ac.uk>

The TOIA project is developing an assessment management system that has technical conformance with the IMS Question and Test Interoperability (QTI) specifications. This means that assessments created using the TOIA software can be delivered through any system which complies with the QTI specifications.

The assessment management system includes a question and test database, a question and test creation tool (for on and offline use), a test delivery system, and a results reporting database.

Further information on TOIA is available at:

<http://www.toia.ac.uk>

Lifelong learner records

The MLEs for Lifelong Learning Programme has funded the development of demonstrator projects which support the lifelong learner in moving through education, training and the workplace in a region.

The first phase of the MLE for Lifelong Learning Programme included the SHELL and NIIMLE projects which are providing cross-sector MLEs across the South West and Northern Ireland respectively. A second phase of projects is building on the outcomes of these and exploring the use of personal development profiles to support learner progression.

The SHELL project has developed a mechanism for the automatic transfer of data between the student records systems of further and higher education institutions, managed learning environments, and personal development planning systems. Data is passed to organisations and systems via the SHELL Hub, using ioNodes to provide connectivity. IoNodes use IMS specifications to communicate with the SHELL Hub, drawing data from the associated record system via a 'plug-in'. The project will provide students with access to online materials from the point of single registration, and also allow them to have permanent internet-based access to their learner record via a portal. For further information on the ioNodes technology, see:

<http://www.ioagent.org/index.asp>

NIIMLE is joining up all the further and higher education institutions in Northern Ireland to provide a common experience for students across the sector, and to break down the traditional boundary between FE and HE. NIIMLE is using an Enterprise Web Services model, mapping the core data to the Enterprise specification. Further information on the IMS Enterprise specification is available from the CETIS Enterprise Special Interest Group at:

<http://www.cetis.ac.uk/members/enterprise/>

For further information on this first phase of the MLEs for Lifelong Learning Programme, see:

http://www.jisc.ac.uk/programme_buildmle_hefe.html

A second phase of projects are building on the work carried out by SHELL and NIIMLE, and are using some of the same technologies. Further information on these can be found at:

http://www.jisc.ac.uk/programme_mle_lifelong2.html

Other developments and investigations carried out under this programme which pilot projects may wish to make use of include:

- A study to explore the legal and records managements issues relating to the concept of the lifelong learner record
- A support project aiming to consult on, develop and support the implementation of standards and specifications in the area of learner information packaging. This will facilitate the development of interoperable personal development planning systems and the transfer of learner information between institutions.

For further information on these and other projects funded under this programme, see:

http://www.jisc.ac.uk/mle_lifelonglearning_info.html

Other JISC development programmes

Other JISC development programmes which may be of interest are:

Core middleware

http://www.jisc.ac.uk/programme_middleware.html

Between April 2004 – March 2007, the JISC intends to fund significant core middleware development via an open call for proposals. Full details of the call can be found under the funding opportunities section of this site. This will encompass a wide range of activities, from the development and evaluation of tools leading to improved national middleware services, to institutional deployment and use of tools and policies.

Learning and teaching programme (ended 31 Jul 2003)

http://www.jisc.ac.uk/index.cfm?name=programme_learning_teaching

This programme was designed to enhance the JISC's services to better serve the learning and teaching community. It provided access to digital collections, and created learning and teaching packages in a number of different subject areas. Certain projects provided tools and guidelines to enable and advise on local learning and teaching.

Portals Programme

http://www.jisc.ac.uk/index.cfm?name=programme_portals

The Portals Programme will investigate the role of portals within the Information Environment and build demonstrators in different areas to demonstrate possibilities, leading to full portal services. Supporting studies and co-operative development with other JISC programmes will be carried out towards creating a fully developed view of the nature and use of portals within learning, teaching & research.

eLearning Programme: Pedagogy strand

http://www.jisc.ac.uk/elearning_pedagogy.html

The aims of the Pedagogy strand are: to provide the post-16 and HE community with accurate, up-to-date, evidence- and research-based information about effective practice in the use of e-learning tools; and to promote the application and development of e-learning tools and standards to better support effective practice.

eLearning Programme: Innovation strand

http://www.jisc.ac.uk/elearning_innovation.html

The Innovation strand explores the impact of innovative tools and applications. Dealing with pedagogical and technological issues, this strand will identify areas where innovative technologies can be harnessed to support learning, in particular the use of wireless and mobile technologies such as games and 'virtual world' simulation software, voting devices, multi-media PDAs, 3G phones and stronger wireless networks.