Libraries and e-learning: be inspired by INSPIRAL

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Abstract
In 2001, the JISC[1]-funded study INSPIRAL (INveStigating Portals of Information Resources And Learning)[2] examined the non-technical, institutional issues involved in linking digital library resources and services with VLEs in UK HE. The findings of INSPIRAL include the stakeholder communities' vision for the future, potential barriers to implementation, and factors in support of successful linkage. Four UK HE case studies provide preliminary exemplars of good practice.

1. E-Learning and Libraries: An Overview
Within the context of recent changes in society, technology, and education, there have been two key developments relating to e-learning in UK universities and colleges:

- The adoption of virtual learning environments (VLEs) and managed learning environments (MLEs) in the provision of online teaching; and
- The implementation of hybrid libraries.

VLEs are tools that support e-learning through provision of learning materials, links, online communication tools (such as electronic bulletin boards and live chat facilities), and administrative and assessment tools. When such VLEs are integrated with other information systems and processes of the institution, e.g. student records, the resultant system is known as a managed learning environment.

Libraries in most UK universities and colleges currently offer their catalogues on-line, many through a standard web-browser. University libraries also offer access to increasing numbers of electronic journals and other on-line information sources, including those provided internally or from remote locations. Virtual versions of library services, such as reservations, registration and reference enquiries, are also starting to be offered, particularly to distance learners. These developments collectively represent the hybrid library, which draws together on-line and physical collections and services, presenting them to the user in a seamless and integrated manner.

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[1] http://www.jisc.ac.uk/
[2] http://inspiral.cdlr.strath.ac.uk/

2. Background to INSPIRAL

The JISC has been at the forefront of these developments, with the funding of the eLib hybrid libraries programmes[3], the DNER[4], and a range of VLE and MLE related work[5]. As a result of evaluations of eLib[6] and the DNER,[7] and in the light of rapidly growing interest in VLEs/MLEs, the JISC realised in 2001 that bringing these major developments together to create a truly seamless online learning experience was both necessary and inevitable. As well as funding technical projects such as ANGEL (Authenticated Networked Guided Environment for Learning)[8], the need for a thorough analysis of the non-technical, institutional and end-user issues was identified. In March 2001, the JISC put out a request for proposals (The JISC. 2001) to carry out this work, and INSPIRAL, based at the University of Strathclyde's Centre for Digital Library Research[9] and Centre for Educational Systems[10], was funded to do so between March and November 2001, in order to inform the next round of funding.

3. Aims & Methodology

INSPIRAL's aims were to identify and analyse, from the perspective of the UK HE learner, the non-technical, institutional and end-user issues with regard to linking VLEs and digital libraries, and to make recommendations for JISC strategic planning and investment. The key deliverable was the *INSPIRAL final report* (Currier, S., Brown, S. and Ekmekioglu, F. 2001), which includes the following:

- An overview of the strategic aims of the JISC in relation to INSPIRAL
- A list of stakeholders, with an analysis of the relevant stakeholder groups in relation to INSPIRAL's remit
- An analysis of the needs of the learner
- Six case study summaries (the full documents are available on the INSPIRAL web site), highlighting good practice
- A summary of critical / key issues, detailing related problems and potential solutions
- A short comparison between UK and overseas developments
- Recommendations of priority areas for future JISC investment
- A summary of the literature review, and a bibliography
- An annotated list of the VLE, MLE and digital library tools and systems mentioned in the project.

INSPIRAL was a qualitative study, involving three phases: issue capture; analysis; and dissemination of results. Each phase fed back into the others. For instance, stakeholders inevitably contributed to the analysis during the issue capture phase, and dissemination of the study's results throughout the project fed back into the first two phases, enabling more issues to be raised and further discussion and analysis to occur.

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[3] http://www.jisc.ac.uk/elib/projects.html
[4] http://www.jisc.ac.uk/dner/
[5] http://www.jisc.ac.uk/mle/
[6] See eLib evaluation documents at: http://www.ukoln.ac.uk/services/elib/papers/other/intro.html
[7] See CERLIM project EDNER: Formative Evaluation of the DNER, at: http://www.cerlim.ac.uk/edner/welcome.html
[8] ANGEL is developing middleware to enable seamless integration between learning environments and information resources. See: http://www.angel.ac.uk/
[9] http://cdlr.strath.ac.uk/
[10] http://www.strath.ac.uk/ces/

3.1 Issue capture

> "Within three days of announcing INSPIRAL, there were about eighty
> subscribers to the project's open discussion list. Clearly it was not going to be
> a matter of hunting out those interested in linking VLEs and digital libraries,
> but of trying to cull down a representative sample to begin our initial
> interviewing process! JISC's interest in this issue is obviously timely, and
> INSPIRAL, in catching the crest of the wave, is offering some great
> opportunities for synergy between the various interested professional groups,
> funding bodies, learners, system vendors and content providers through our
> research methodology." (Currier, S. 2001)

The issue capture phase involved identifying, contacting and consulting with key
stakeholders, a literature review, and identifying appropriate case studies. The
primary stakeholder was considered to be the learner, however, due to the timing of
INSPIRAL during the summer break, only five learners were consulted. Other
stakeholders came from all sections of the HE and FE sectors, including librarians,
academics, educational and staff developers, learning technologists and systems staff.
Bodies related to educational provision and commercial enterprises with an interest in
e-learning were also included. These stakeholders were consulted via 17 interviews,
and two stakeholder forums. Additionally, the INSPIRAL open JISCmail discussion
list operated throughout the project, and was a notable success. It was well used by
stakeholders to discuss various issues that had arisen throughout the INSPIRAL
project. Stakeholders from various areas of education took part in the discussions, and
the list archive is a valuable resource.[11] The list now has over 200 members, and is
continuing indefinitely beyond the end of INSPIRAL.

In terms of the literature review, very little had been written prior to 2001 about
linking or integrating digital libraries with online learning. However, the literature
provided substantial background to and support for the findings of the stakeholder
consultation, particularly in the area of institutional and professional role changes as a
result of e-learning developments. It also brought to light potential case studies; six
were identified, and are summarised in section seven below.

3.2 Analysis
In addition to discussion and feedback via the discussion list, presentations,
conferences and seminars, two workshops were held to enable stakeholder
participation in the analysis phase. The following speakers at the workshops presented
findings from other relevant work:

- Nicole Harris (ANGEL Researcher). "ANGEL Formative Evaluation".[12]
- Martin Jenkins (UCISA Teaching, Learning and Information Group Chair).
  Interim findings of the UCISA study "Management and Implementation of VLEs
  within Universities and Colleges".[13]

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[11] http://www.jiscmail.ac.uk/lists/inspiral.html
[12] See also: http://www.angel.ac.uk/.
[13] Draft version of the full UCISA report should be available on the UCISA TLIG web site
(http://www.ucisa.ac.uk/) soon.

- John MacColl (Co-Director of ANGEL and Director of Edinburgh University's SELLIC Project). "Virtuous Learning Environments: How to make Library Systems and VLEs Interoperate".
- Richard Mobbs (Head of the Learning Technology Team at the University of Leicester) "Virtual Learning Environments, Libraries and Institutional Change".
- Ruth Jenkins (Birmingham University). Findings of the BUILDER Project.[14]
- Claire Ryan (University of Leeds). Findings of the Nathan Bodington Building and the Virtual Science Park VLE/hybrid library integration projects.[15]

Reports from these workshops, including links to the above presentations, are available on the web site (Currier, S. and Brown, S. 2001) (Brown, S. and Ekmekioglu, F. 2001).

3.3 Dissemination
The usual web site, press releases, articles, presentations and conference papers, and JISCmail list were used to disseminate INSPIRAL's findings.

4. INSPIRAL's Findings (1): The Vision
The vision expressed by INSPIRAL's stakeholders for a fully integrated e-learning environment included:

- Seamless, one-stop access
- All library functions online
- Individualisation for the learner
- Flexibility for the teacher
- Universal accessibility
- Ease of use

Certain caveats were expressed regarding all of these ideas, usually by those more experienced in e-learning provision.

4.1 Seamless, one-stop access
This includes seamlessness between the learning environment and the library or information resources at any point in the VLE, and seamlessness within one user's portal across different courses, departments or even institutions. The most important aspect of this was the single authentication or password procedure, regardless of whether the user is accessing the VLE from on- or off-campus.

Warning notes included potential problems with seamless cross-searching of different databases, indexes and other information resources[16]. Lack of interoperability of search vocabularies, and a lack of awareness of and strategies to deal with this in course design, could lead to confusing, ineffective resource discovery experiences for learners. Some stakeholders (including learners) were of the opinion that sometimes experienced Internet users do not mind coming out and going into different databases if they are already familiar with them. Such people may feel hemmed in by a completely seamless environment; one Workshop participant said that the VLE 'shell'

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[14] See also BUILDER web site: http://builder.bham.ac.uk/
[15] See also: (Currier, S. 2001a).
[16] See JISC/RSLP funded project HILT (High Level Thesaurus) for a full analysis of this issue, at: http://hilt.cdlr.strath.ac.uk/

could become a cage. As the population coming into universities becomes more and more IT literate, this issue may need more attention.

4.2 All library functions online
This includes:
- a reference and enquiry service;
- reserves, document delivery and interlibrary loans;
- user records, including paying fines and subscriptions;
- access to all online resources, catalogues and databases available through the library;
- web guides and access to resources tailored for the particular course or module;
- online versions of required readings;
- and information skills and literacy training.

Concerns about this include the potential diminishment of two important educational functions of traditional libraries: serendipitous browsing (finding the book you need right next to the one you were actually searching for); and their social function as a place to meet fellow students and discuss sources of information, etc.

The latter may be catered for by the VLE's online communication and resource sharing tools, but teachers must take care to encourage and enhance the use of these. The Edge Hill experience (Currier, S. 2001b) showed that some face-to-face sessions throughout even a distance course are invaluable in introducing students to each other and to staff, and ultimately to encouraging ongoing collaborative participation.

The former touches on the spoon-feeding question; serendipitous browsing can happen within a library catalogue and on the Internet, but learners may need to be encouraged to use these, as opposed to just reading the required texts, and may need to learn to evaluate the quality of what they find on the Internet.

There is another concern that touches on the human contact element of online learning: contact with library staff. This was raised by learners, rather than librarians. Libraries offering services to their distance learners in institutions world-wide are developing ways to give their users the same kind of personal, efficient and 'on time' service as they offer face-to-face. Initiatives such as Leicester University's pilot reference chat service (McGill, L. 2001) are making steps towards this, and in the U.S. the University of Tennessee (Brown, S. and Currier, S. 2001) has developed various ways of ensuring distance services meet learner needs for contact with librarians.

4.3 Individualisation for the learner
Includes such ideas as:
- the student portal, which could cross institutions and be available throughout a learner's life;
- the Amazon idea of tailoring resources and notifying the user about relevant resources;
- the ability to save and share searches;
- the ability to take and embed notes with information resources, and to share resources;

- and search settings for "level" such as undergraduate, third-year etc., with options to adjust upwards if the user wishes.

Some stakeholders felt that, particularly with the last option, this could be taken too far. Once again, not all students want or need this much handholding, and some, particularly the technically proficient or information literate, might even find it restrictive.

4.4 Flexibility for the teacher

Teachers would like to be able to easily adapt or update courses, including the information resources embedded in or linked to from them, from anywhere. Flexibility in terms of being able to design the course according to their own pedagogical approach, rather than having it dictated by the system, was also seen as extremely important, and vital for bringing academics on board with e-learning. Finally, the system should have the capability to feed back data to the teacher about what information resources and services are being used.

However, some teachers may find this too time-consuming, and prefer the kind of VLE system that is an easy-to-use but difficult-to-tinker-with template. Forward planning months in advance of a course is also not always practical.

4.5 Universal accessibility

The Holy Grail of universal accessibility includes:
- accessibility for users with differing physical abilities;
- adaptability to differing learning styles;
- availability on and off-campus (an issue with regard to certain subscription library materials);
- equitable access for distance learners abroad (usually the biggest problems are access to hard copy resources and time zone problems with communications);
- equitable access for the economically disadvantaged (those with a PC or laptop of their own, versus those who have to wait in line at the Computer Centre);
- and usability on any platform or hardware.

The last of these in particular must be qualified by 'within reason'.

The problems of distance learners abroad are being partially looked into by the British Council's pilot Distance Learning Zones project[17], which, while it is not applicable to INSPIRAL directly, is worth investigating by institutions with overseas students.

4.6 Ease of use

Not much can be added here except, in the word of one LT expert interviewed by INSPIRAL:

> "For systems to be easy to use 'on top', they must be more complex underneath." -- Learning technology expert, quoted in (Currier, S. 2001d)

And this of course means more time, money and expertise.

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[17] http://www.britishcouncil.org/infoexch/dlz/index.htm

5. INSPIRAL's Findings (2): The Barriers

A couple of stakeholders consulted explicitly stated the view that technical issues are not the most significant barriers to integration, making the point that, if we could solve the organisational problems which exist at every level, we could easily train our ingenuity on the technology and move forward.

The barriers that were identified throughout INSPIRAL fall into the following areas, each of which leads into the next:

- Resourcing issues
- Institutional infrastructure and politics
- Staff development issues
- Teaching and learning issues
- Content issues
- Access issues

5.1 Resourcing issues

- There is a need for coherent vision and adequate resources from a high level within HE, responsive to the demands and needs of the learners and the coal-face expertise of educational staff. This is a common problem in HE, but it is exacerbated in this area because these e-learning developments are demanding the collaboration of disparate groups, with different priorities, viewpoints, and even different e-learning 'languages' (ask a computer programmer, a librarian and a biology teacher what a 'taxonomy' is!).

- Top level managers in universities and colleges need to understand that developments in e-learning are not cost-savers, and may require additional resources to implement effectively. However, there was wide agreement that the considerable benefits, if properly presented, should make this palatable.

- Who in an institution is responsible for these initiatives? Once again, the overlap of interests within and between institutions (e.g. between library services, learning technologists and academics) requires strong, responsive leadership from above.

- There was some feeling amongst the stakeholders that too many projects are funded, and not enough services, particularly amongst enterprises that should be services, incorporating long-term strategic thinking and stability of staffing and other resources. The 'death' of good projects which users had wanted to see become services was often discussed over tea breaks at INSPIRAL's events. The issue of supporting funded projects in the transition to service is a significant aspect of this.

5.2 Institutional infrastructure and politics

The nature of the proposed integration requires co-operation, collaboration, mutual understanding, and sharing of resources. The traditional culture within HE was seen by many to be inimical to this, constituting a serious barrier to efficacious implementation in many institutions. The same barriers exist at the level of HE and

FE funding bodies, professional associations and government. This ties into the previous issue of resourcing, but some other points include:

- Competition and territorialism.
- Resistance to change in general.
- Resistance to new technologies.
- Fear of change and evolution of professional roles.
- Inter-professional difficulties, particularly between libraries, academia and systems.
- Incentives: a research culture where teaching skills and developments are not rewarded, and support staff such as librarians and staff developers are not accorded equal status with their academic colleagues, even when they teach.

5.3 Staff development issues

Staff development could be seen as both a resourcing issue and an infrastructure issue. However, it has its own specific problems. It was raised at every juncture of the study as an absolutely necessary part of the success of any new venture in education, particularly where people are feeling fearful or threatened.

- Support and training for staff needs to be ongoing, and means more than just teaching them to use the technology. New skills and new roles must be incorporated.

- Pedagogical issues need to be incorporated, to ensure the academic validity of teaching and using information online. These issues have a history of being ignored by librarians in particular, but for academics to accept the close library input necessary, this must change.

- Staff development must be applied to all staff; not just those directly involved in preparing an online course.

- The professional incentives must be there, such as accreditation.

5.4 Teaching and learning issues
- Time and again, concerns over the potential for spoon-feeding students information versus overwhelming them with information overload, or letting them loose in the un-controlled world of the Web were raised. Information skills and literacy are an extremely important issue.

- Some stakeholders said that online learning should be an enrichment tool, not a replacement for campus-based, face-to-face learning. However, as others pointed out, distance learners must be supported in equivalent ways to students in classrooms. If universities want to increase their student numbers through distance learning, avoiding needing more physical space, they have a duty to ensure that those learners are not disadvantaged.

- The issue of differing learning styles was also raised. Edge Hill was one case study where active attempts to deal with this issue were being made. (Currier, S. 2001b)

5.5 Content issues

- The development and availability of high-quality content was of concern to some teachers, who felt that what is presently available is off-putting to teachers, particularly with the possibility of online resources being removed or changed. As one stakeholder interviewed said:

> "You don't know when someone's going to pull the plug on a resource, when you have found a good one. You could design a great course around it and then someone pulls the plug on it." – Staff developer, quoted in (Currier, S. 2001d)

- There was some discussion around how much time and effort teachers should spend developing their own content, versus commercial production of content and the attendant access and quality issues. Who judges content worthy is an important question, particularly in an environment where it is very easy for anyone to post anything on a web page.

- The sharing of content was put forward as an ideal, with its own problems.

5.6 Access issues

Authentication, IPR and copyright, privacy, plagiarism, and interoperability were all common concerns. These are being looked at in various JISC projects and studies.

6. INSPIRAL's Findings (3): Factors Supporting Integration

The three key elements in supporting the cultural change necessary for successful integration of libraries and e-learning were found to be:

- Vision
- Collaboration
- Evaluation

6.1 Vision

- Backed by resources and strong leadership from the highest level within institutions
- Responsive to cultural, professional and learner needs and experience from below

6.2 Collaboration

Co-operation and collaboration between:

- Academics;
- Librarians;
- C&IT and learning technology departments;
- educational and staff developers; and …

…supported by professional recognition and development.

6.3 Evaluation

- Evaluation is necessary to ensure that change and new developments are oriented to learner needs.

- This means not just user satisfaction surveys, but evaluation of learning outcomes. This is also of great importance in bringing teachers on board with libraries' efforts to provide e-resources, rather than relying on Google.

7. INSPIRAL's Findings (4): Case Studies

When INSPIRAL began, the literature review and other investigations revealed that little practical work had been done in the area of integrating or linking digital libraries with VLEs. Over the course of the project, various institutions developing such endeavours came to light. However, most of them were in the very early stages of implementation, and were themselves hoping that INSPIRAL would inform their developments. In the end the case studies virtually chose themselves, as the only examples of working linkage or integration between VLEs and libraries found. Fortuitously, they cover a range of possible approaches to learning, use of software and types of institution, including two old universities, two new universities, one FE college and one American university. Geographically they cover England (north and south), Scotland and abroad. Two have developed their own in-house VLEs, while four are using commercial products, including the popular WebCT and Blackboard. The courses supported are professional, post-graduate, undergraduate, staff development, community-based, distance and campus-based. Subject areas covered include: business and commerce, information science and IT, engineering, health and medicine, tourism, publishing, law, social sciences, education, geography, philosophy and key skills. Two of them ran pilot projects for which they carried out user evaluations.

The case studies were:

- The Robert Gordon University Virtual Campus Library
- The University of London Virtual Campus Project
- The University of Leeds Nathan Bodington Building
- Edge Hill College of Higher Education: Post-Graduate Certificate in Teaching & Learning in Clinical Practice (Introductory Module)
- Harlow College: HOLLi (Harlow On-Line Learning Initiative) and COLLi (College On-Line Learning Initiative)
- University of Tennessee Libraries.

Of these, the four HE cases are presented in brief below. Full versions of all six are available on the INSPIRAL web site[18].

7.1 Case Study 1: Robert Gordon University Virtual Campus Library

7.1.1 Overview
- New university based in Aberdeen, Scotland.
- VLE serves distance learners world-wide.
- Commercial VLE: ESRI Virtual Campus (U.S.-developed). NB: Unfortunately this University is now searching for a new VLE as ESRI has stopped supporting its UK customers. This highlights the problems inherent in choosing e-learning software. However, it is worth looking at RGU's present set-up as it presents the integrated Library in an attractive and useful way.

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[18] http://inspiral.cdlr.strath.ac.uk/documents/casestudies.html

7.1.2 Elements of good practice

- High-level support for library integration from Director of Centre for Open and Distance Learning (CODL), Chief Librarian, University Secretary.
- Close collaboration between library and CODL. Began with secondment of librarian to CODL. Now ongoing dedicated library staff member. Set up Distance Learning Working Group consisting of librarians and CODL staff member.
- Collaboration has resulted in library staff, who were originally sceptical, becoming enthusiastic as they saw services to distance learners improve. Staff at the CODL have learned about the complexity of library services, and the kinds of resources and services that can be offered.
- Full range of library services and resources available online, including registration, reserves and requests for postal loans, checking borrower records and renewals, user education and training, reference service, web guides and other online resources tailored to specific subject areas, HERON service for digitised readings, NetLibrary for ebooks.
- Plans to carry out user-satisfaction evaluation.

7.1.3 Additional issues

- The Virtual Library is not completely seamless; users must log-in to the Library OPAC separately via Telnet.
- Document delivery and ILL are not completely online. Because physical signed copies of copyright clearance forms are needed, requests must be printed off and posted in.
- Books may not be requested by ILL. Reference and short loan collections may not be borrowed. However, the RGU offers the UK Libraries Plus scheme to enable users to use a library near them.
- Overseas students only have access to online materials, or photocopies of articles and chapters.
- Learning outcomes evaluation not planned.

7.2 University of London Virtual Campus Project

7.2.1 Overview

- Old university, federation of seventeen self-governing colleges, based in London.
- VLE serves distance learners world -wide.
- VLE developed in-house.
- Pilot service at present, to be rolled out to full distance learning service.

7.2.2 Elements of good practice

- High-level support enabled this collaborative venture between the distance learning, computing and library services of the University.
- A dedicated project team, based in the Library, including a full-time co-ordinator and a full-time assistant.
- Evaluation integral to pilot. Range of qualitative and quantitative methods, including learners and staff
- A dedicated library staff member with a dedicated phone line is provided for distance learners.
- Academic staff are included via a user group with an online discussion list and face-to-face meetings.

- Wide range of library services and resources are available online, including enquiries and reference, user education, a full virtual reference collection, online resources arranged by discipline and course.
- Aiming for complete seamlessness, on and off-campus.

7.2.3 Additional issues
- Required readings are not included. This is because of internal infrastructure; required readings are provided by the individual college involved.
- No mention is made of reservations, registration, user records and renewals, or ILL online.
- Learning outcomes evaluation not planned.

7.3 University of Leeds Nathan Bodington Building

7.3.1 Overview
- Old university, based in Leeds.
- VLE/library integration pilot served undergraduate, on-campus learners.
- VLE developed in-house (now available as open source software).
- Module level pilot, to be rolled out to a range of other courses.

7.3.2 Elements of good practice
- High-level support from Library management, idea spear-headed by enthusiastic librarians, Library supplied funding for project.
- Library staff worked closely with teachers on modules.
- Built on Library's strong e-resource collections and infrastructure.
- Began with module-level pilot, with evaluation integral, including both staff and students.
- Provided tailored library resources including reading lists linked to full-text or the Library catalogue, digitised core readings; access to Library catalogue; links to online resources, including DNER/RDN resources.
- Provided library services, including user education, contact details, e-mail enquiry desk, videoconferencing facility.
- Plan for future to evaluate for teaching and learning outcomes.

7.3.3 Additional issues
- Level of granularity of resources / services still to be addressed.
- Exploring integrated links to national services and developments.

7.3.4 Pilot evaluation found that:
- Teaching staff felt it had improved quality of learning
- Flexibility and user-orientation appreciated by learners
- Reading list facility and digitised readings important; encouraged students to use and explore facilities

7.3.5 Pilot evaluation concluded that:
- Library input is vital for meeting learner needs
- Collaboration between library and teaching staff is very important
- Library involvement at institutional implementation level is essential

7.4 Edge Hill College of Higher Education: Post-Graduate Certificate in Teaching and Learning in Clinical Practice (Introductory Module)

7.4.1 Overview
- New university, based near Preston and Liverpool.
- VLE/library pilot serves post-grad, CPD distance learners.
- Commercial VLE: WebCT.
- Pilot for this Certificate rolled out to other courses.

7.4.2 Elements of Good Practice
- Close collaboration between library, teaching & learning unit, online course developers and teachers.
- Strong support for staff whose roles were changing; online staff development courses.
- Library resources and services provided included: tailored access to online resources; information and advice on access to physical resources and services such as ILL; specific resources embedded in course content; support offered online, face-to-face at introductory session and as printed materials; access to search engines and web guides; user education.
- Learner evaluation of original pilot carried out and changes made as a result to improve service.
- Conscious effort to ameliorate learning styles difficulties by providing face-to-face support and printed materials.

7.4.3 Additional issues
- All services (such as reserves and ILL) not provided online.
- Learning outcomes evaluation not planned.

7.4.4 Pilot evaluation found the following to be important:
- Institutional commitment and direction
- Strong central learning support services
- Close collaboration
- Strategic positioning of information services
- Staff skills and role development

7.4.5 Pilot evaluation concluded:
- Information professionals need new roles, skills and relationships
- Seamlessness is made possible by close collaboration
- Development of relationships within new academic team crucial
- Information professionals must be proactive, not merely 'encourage'

7.5 Conclusions from case studies
It is apparent that the four UK HE-based library / VLE integration services studied have thought to some degree about the critical issues and vision for online learning also identified by the rest of INSPIRAL's stakeholders. They exemplify the idea that high-level support and collaboration are the key factors in building a successful integrated online learning experience. The one element that is missing from all, except for within the final observations noted at Leeds University, is evaluation of the teaching and learning impacts of library resource and service integration within online learning. This is something that would go some way to opening teachers' minds to the

inclusion of librarians and libraries in their online teaching initiatives, as well as enabling the improvement of services. Both Leeds and Edge Hill emphasise also that it is imperative that libraries position and promote themselves actively within institutional e-learning initiatives.

INSPIRAL's Recommendations to the JISC

INSPIRAL's ultimate aim was to make recommendations to the JISC regarding future funding strategy. In short, these said that the JISC should:

- Provide standards, guidelines and information to the HE community covering the main issues identified by INSPIRAL;
- Fund development projects for scaleable and reusable initiatives with regard to the findings of INSPIRAL;
- Form and support consortia to influence relevant commercial interests and to enable resource sharing; and
- Build on INSPIRAL's findings with further study in certain areas, including virtual research environments.

A Final Note

In the short time since INSPIRAL began, the number of HE and FE institutions beginning to implement some kind of linkage or integration of libraries within their institutions' e-learning initiatives has increased markedly. The evolution of teacher, learner, information professional and technologist roles has begun. The INSPIRAL web site is a good starting point for beginning to investigate background information. The INSPIRAL Open Discussion List was also a notable success of the project. It is still operational, and you are welcome to join the list and use it for discussion, information and support in your own e-learning developments. The list archive is also of great interest, and includes various topical discussions between librarians, learning technologists and academics.

This is a time of great change for all of us who are working in education. Preparing ourselves to embrace such change in order to continue supporting our users is vital. My own evolution through my work on INSPIRAL and previous digital library projects has convinced me that, not only is this an exciting prospect, but that the changes are not as painful as we might think! We have a lot to learn from teachers in particular, and they from us.

References

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