Integration to Support Lifelong Learning

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Abstract

The increased use of e-learning tools or virtual learning environments (VLEs) has led to pressure to join the VLE up with administrative systems. In the UK this type of development is often known as a Managed Learning Environment (MLE).

At the same time as institutions are wrestling with the problem of becoming more 'joined-up' internally the UK government is promoting an agenda of widening participation and lifelong learning. This is resulting in increased pressure for joining up between institutions particularly across the further and higher education sectors.

The Joint Information Systems Committee (JISC) has funded a number of projects under its 'MLEs for Lifelong Learning' programme to explore aspects of cross-institutional integration. This paper will draw out key issues arising from that programme. The presentation accompanying the paper will also introduce participants to a self-assessment tool that can be used in any institution to gauge current levels of integration and to help with forward planning.

Keywords: Integration; Managed Learning Environment; Lifelong Learning.

1 Introduction

Many institutions across the UK have embraced e-learning as a key tool to support their learning and teaching strategies and move learning and teaching into the 21st century. The increased use of e-learning tools or virtual learning environments (VLEs), such as Blackboard and WebCT, by the academic community has in turn led to pressure to join the VLE up with administrative systems such as student records, library, finance, timetabling personnel etc. In the UK this type of development is often known as a Managed Learning Environment (MLE). This kind of joining up is about much more than simply interfacing systems. The creation of a successful MLE requires integration right across the institution. This often demands a thorough review of business processes and brings about major organisational and cultural change. The current state of knowledge and experience related to the development of institutional MLEs in the UK has been brought together and synthesised in a resource called 'Creating an MLE' [1] on the JISC infoNet website.

At the same time as institutions are wrestling with the problem of becoming more 'joined-up' internally the UK government is promoting an agenda of widening participation and lifelong learning. It aims to ensure that people from all socio-economic groups have access to higher education and to ensure that education is a lifelong process. The introduction of Foundation Degrees is helping to bridge the gap between further and higher education. Foundation degrees are a new, vocationally focused qualification, delivered in two years and designed to equip learners with skills and knowledge relevant to their employment. Designed and developed directly with employers, Foundation Degrees are often delivered as a partnership between universities, further and higher education colleges and employers and tend to be available via flexible study methods. This is resulting in increased pressure for joining up not only within but across institutions particularly in the further and higher education sectors.

2 Measuring Integration

In 2002 the JISC and UCISA commissioned a survey that came to be known as the MLE Landscape Study [12]. All institutions of further and higher education in the UK were surveyed to assess the extent of their systems integration. The results of that survey can be found on the JISC infoNet website [12]. The survey was repeated early in 2005 (now named the e-Learning Environments Survey) and the results are soon to be published.

One of the most useful outcomes of the exercise was the development of a self-assessment tool, known simply as 'the matrix' [5]. The matrix is a tool that can be used by any institution to gauge where it currently stands on the spectrum from little or no systems integration to highly integrated. It allows the user to get an analytical overview of all of the systems supporting learning and teaching and, most importantly, to help plan where they want to go in the future.

The matrix looks at integration against a number of core elements of the learning and teaching process as shown in the following table:

	Matrix Element
1	Course enrolment
2	Single sign-on (to access electronic learning resources and environments)
3	Personalised access to learning and support resources
4	Access to course description and learning outcomes
5	Module selection
6	Academic/teaching guidance
7	Student access to library/ learning resource centre
8	Integration of online library resources with VLE
9	Support for users of electronic learning resources
10	Student access to administrative data
11	Fee payment
12	Accessibility of resources for students and staff with a wide range of access needs
13	Staff access to course administration
14	Tracking of students' attendance
15	Monitoring of students' use of online resources
16	Assessment
17	Assessment results
18	Staff access to institutional information
19	Recruitment/ application
20	Personal development planning
21	Peer support and collaborative working
22	Online course development
23	Standards
24	Curriculum development process
25	Timetabling/Scheduling/Calendar
26	Management information

Table 1: The elements of the matrix.

Space does not permit the replication of the full matrix in this publication but it can be downloaded from the JISC infoNet website [5]. For each element the matrix identifies five levels of integration ranging from no integration/online access through to online access across a range of partner institutions. For example in relation to element 20 Personal Development Planning (PDP) the levels are:

a) Transcripts and PDPs only available in paper format

b) Transcripts can be viewed online but no PDP tools

c) Online access to transcript and PDP but in different systems

d) Transcript and PDP tools available from a single entry point

e) Transcript and PDP tools available from a single entry point *across partner institutions (i.e. Lifelong Learning Record)*

The matrix allows respondents to identify where they are now in relation to the five levels and where they want to be in 2-3 years time hence it can be a useful tool to support the institutional planning process. The resource 'Implementing e-Learning' [4] gives guidance on taking those plans forward.

3 Integrating across Partners

The highest level of integration identified in the matrix is where the learner records can be shared and viewed seamlessly across a range of partner institutions. Although very few institutions would claim even to have achieved the desired level of integration across their internal systems, integration with a range of partners is now a priority.

There are currently two approaches to the joining up of information systems between different learning providers within the UK: a top-down government led approach and various bottom-up regional approaches. The government is keen to improve its longitudinal view of learning activity in the UK and is driving a project called MIAP (Managing of Information Across Partners) to enable the sharing of learner information between institutions, funding bodies, student support agencies such as Local Education Authorities and the Student Loans Company, and learners themselves. This was originally envisaged as relying on the establishment of a central database but the government responded to pressure to adopt a federated model similar to the new Shibboleth [13] protocol that allows for federated authentication and authorisation to access a range of learning resources without the need for one centralised database. MIAP will now rely on the reuse of existing data sets, linking them together through a newly developed learning data interface. The learning data interface is likely to be a browser-based portal with an xml-based web service drawing information held from a number of existing data sets. The project is due to begin implementation in autumn 2005 and roll out across the UK during 2006.

The JISC-funded MLEs for Lifelong Learning Programme [6] has complemented this approach by funding a number of projects to explore the issues related to developing learning environments to support the seamless movement of the learner between and across sectors and institutions. The 'bottom-up' approach referred to earlier. Programme objectives are to:

- establish cross institutional architectures to provide generic solutions to deliver learning

- explore access to and delivery of learning materials across institutions

- develop protocols and standards for the transfer of information across institutions and explore the use of student learning profiles

- measure and record the impact of cross-institutional systems on business processes of institutions

- identify and address the implications for staff development

The programme has been running since 2002 and is due to end in July 2005. A number of projects are looking at Personal Development Planning (PDP) and e-Portfolios while others have looked at integration of learner records on a regional (e.g. SHELL [9]), national (e.g. e-College Wales [7] and NIIMLE [8]) and multi-national (e.g. Union Education Online [10]) basis.

MLEs for Lifelong Learning has demonstrated real benefits to students and potential students in being part of integrated regional networks. Rather than having to seek information from a variety of different institutions the student should be able to get a more holistic view of the opportunities offered by a range of institutions with different specialities and delivery mechanisms and be able to transfer their own data and records of achievement easily between institutions making the concept of lifelong learning a practical reality.

4 Lessons Learned about Integration and Supporting Lifelong Learning

Each of the MLEs for Lifelong Learning projects has its own website (see References) but this paper will highlight a few of the key lessons learned from the experience of integrating across partners. The examples here are taken from regional, national and multi-national projects. Most of the same issues arise even when integrating systems within a single institution; they are nonetheless made more complex in this context by the number of players involved. The main lesson is that the technical aspects of integration are generally the least problematic part of the projects – the human and organisational issues are much harder to solve.

4.1 Managing across Partners

Most of the issues involved in managing across partners are similar to the issues in managing any project with a large number of stakeholders. Each institution will have its own organisational culture (as well as sub-cultures within that) and values and its own agenda for participating in the project. Any differences need to be understood at the start if they are not to cause problems downstream (N.B. the section on 'Understanding your Organisation' in the 'Creating an MLE' infoKit is a good starting point [1]).

What makes a multi-institutional project slightly different is that a change in institutional leadership in any of the partners can lead to changed priorities in that institution. The SHELL project saw some of its original consortium members drop out and new ones come on board. The Union Education Online project had to tackle the slightly different issue of incorporating key stakeholders who hadn't been identified at the start.

As with any project, staff can be deflected by 'the day job'. This situation can be exacerbated in cross-institutional projects by the fact that the part of the organisation that gets the project funding is not necessarily the only part that is needed to do work on the project. The issue of resource priorities is faced in any project but may be more extreme in a

situation where the project is externally led and the credit for success may be far removed from small pockets of workers in each institution.

There may be issues with getting the buy-in of technical staff where development work is external to the institution. This is currently being seen in areas where development requires leading edge skills such as knowledge of IMS or xml that may be in short supply in some or all of the partner institutions.

Getting whole institutional buy-in in a single organisation is difficult – acquiring and maintaining that buy-in across several organisations is extremely so. The Union Education Online project identified a clear link with strategy as being essential to obtain this commitment. The Trade Union Congress had a strategy to make all of its education provision available online and participants in the project could see the clear benefits to be derived from this in terms of improving access to education.

Sound project management has been identified by all of the projects as essential to success. The Union Education Online (UEO) project emphasised the need to keep project documentation up to date rather than write a project initiation document (PID) then keep it locked away until the end of the project. The project stressed that its approach was based on problem solving not problem documentation but it nonetheless recognised that documentation (especially the PID) is important. The SHELL project emphasised the importance of the project Board having the right mix of people and the ability to draw on senior management support from all institutions when necessary. UEO also noted the value of short telephone conferences on a regular basis rather than lengthy but infrequent meetings.

N.B. You can find a simple approach to Project Management for the Education sector on the JISC infoNet website [3].

4.2 Business Processes

A key challenge in supporting lifelong learners is creating business processes that are actually focused on the needs of the learner and this is made particularly complex when a range of different institutions are involved.

The SHELL project set out to achieve single registration for students in the University of Plymouth and its partner colleges and to enable the learner to move from institution to institution and take their learner record with them. The increase in online learning and the use of virtual learning environments to support all aspects of learning and teaching makes the need for a quick and seamless registration and enrolment process all the greater. The student is now reliant on access to the VLE in order to obtain essential information and take part in online learning. If any part of this process is delayed or inaccurate then the learner will not be provided with the necessary log-on and security rights to access the information they need.

The SHELL project had to tackle a range of issues whereby students enrolled in partner colleges using paper forms and

delays in transferring the data to the university resulted in delays in issuing computer IDs and passwords. This example also serves to raise the issue of differences in academic and administrative priorities in relation to the enrolment process. The academic, and of course the learner's, priority is to get the student enrolled onto the correct modules of the VLE. On the administrative side however the priority is often to prepare the data for funding returns carried out at particular census dates. Often the data elements required for the two parts of the process are different and one set is verified and input at the expense of the other.

SHELL also experienced some fundamental differences in the nature of the process e.g. some colleges enrol students once only for the life of their course whereas the university partner required annual re-enrolment. Resolution of differences like this requires considerable flexibility on the part of the institutions involved. A 'We do it this way' attitude can be problematic particularly where the relationship is an unequal one.

The UK has very strict legislation on Data Protection and all of the projects working across partners have encountered issues relating to this. As well as requiring data to be accurate and up to date, the law states that data can only be processed for approved purposes (that are registered with the Information Commissioner for each institution) and should only be kept so long as is necessary. This means data requirements have to be specified very precisely at the start of a project – you cannot collect data because it might potentially be useful later on. The legal implications of this legislation for lifelong learner records are too complex to address in this paper (the topic is covered in a separate JISC study [11]) save to say that they require detailed analysis of business processes and careful thought about who needs access to data and why. The Union Education Online project had many data protection issues to deal with both across the partners and in defining the role and requirements of external examiners. The project website has a useful report showing how the information flows and roles and responsibilities were mapped [10]. This project worked across the four nations of the UK and had to deal with the fact that processes relating to funding, quality assurance and qualifications are becoming increasingly divergent in those four nations.

Finally the timescales of some business processes can cause problems and this is not just restricted to the area of enrolment. We will look in the next section at the types of flexibility needed by lifelong learners but it is evident that some of our processes must be speeded up if we are to provide the levels of responsiveness and flexibility required. The SHELL project encountered issues with the time taken to approve and quality assure a new course at the university. Partner colleges were aware of planned courses and trying to prepare for them but encountered problems trying to update their records as they were entering course codes etc that the university did not yet recognise.

The e-College Wales project is developing a Foundation Degree in e-commerce with c.15 institutions collaborating on the content an this has required a major effort to align quality assurance processes. The institutions involved have had to agree on a learning and teaching model and set up a system of cross-institutional peer assessment. This not only requires changes to business processes, it demands a level of openness and trust between individuals in different institutions that is very different to traditional practice in developing course content and leads us into the issues of the cultural change required to make lifelong learning succeed.

N.B. You can find guidance on developing learner-centred business processes on the JISC infoNet website [2].

4.3 Cultural Change

The development of an MLE necessitates cultural change in organisations that are used to their component departments working in individual 'silos'. The sharing of data and resources and the emphasis on cross-departmental business processes may be a major change for some institutions. The changes to the learning and teaching process may however be even greater. The e-College Wales project addressed a number of cultural challenges in order to deliver e-training solutions to small and medium enterprises across Wales. In order to meet the needs of their lifelong learners they had to challenge a number of characteristics of the traditional education system.

The first of these was the concept of the 'academic year'. Their key clients are small businesses wanting training for their workers. These businesses require training to be delivered flexibly as and when needed rather than having to wait until the start of a new academic year before a course can begin. This brings into question the whole funding model for UK education which is based on student numbers at particular census dates (see above for the implications of this on business processes). Current demand is moving much more in the direction of roll-on roll-off programmes where students can start and finish at any time during the year and where students who start at the same time may progress at different rates depending both on their abilities and other commitments.

This has implications for the working patterns of staff supporting those learners for example the notion of a fixed vacation period becomes inappropriate. There is also a need to have support available during an extended range of hours. Learners in employment tend to develop study patterns that may be very different to those of the traditional learner. The Union Education Online project also noted this and identified examples such as working mothers who did their studying for a couple of hours a day starting at 5 in the morning.

Equally radical are the implications for the traditional campus. At Coleg Sir Gâr, in Wales, tutors supporting online distance learning work from home. This obviously reduces the need for staff offices and this, coupled with the implications of wireless and mobile computing, means that the campus of the future may be very different. Home working may also be an important feature of enabling support for lifelong learners. Staff working at home may be able to

be more flexible in making themselves available to support learners outside normal working hours.

In management terms home working tends to raise a range of issues about working patterns and value for money. Coleg Sir Gâr has addressed this by emphasising the effectiveness of student support and is piloting a scheme (in agreement with the relevant trade union) whereby tutors achieving above average results get paid more than the average salary and *vice versa*.

Finally, this form of learning where much is online and delivered across partners, raises questions about the role of the individual academic in both delivering the course and maintaining course materials. There are similar issues across a range of student support functions but it may be in the changing academic role that we see the greatest cultural change.

5 Further Work

Many of the issues covered in this paper such as lifelong learner records and the transfer of data between institutions will be faced by universities and colleges across Europe over the next few years as we begin to make the aims of the Bologna Declaration a reality. There remain many issues to be solved but there is also much existing good practice to be uncovered.

With this in mind the Higher Education Funding Council for England has funded a new project entitled 'Collaborative Approaches to the Management of Lifelong Learning'. The project, which is being led by JISC infoNet in partnership with the Association for Learning Technology (ALT) and the Higher Education Academy, aims to identify and promote good practice in the management of ICT to support lifelong learning. The project will develop a community of practice based around a series of study visits and a discussion forum. If successful this may prove a useful model for extension to other countries.

Acknowledgements

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