

Managed Learning Environments for Lifelong Learning Programme: Building MLEs across FE and HE

Phase 1 Overview, October 2003

Context

JISC Circular 01/01 in June 2001 announced the Managed Learning Environments for Lifelong Learning Programme: Building MLEs across FE and HE. In response to a projected increase in lifelong learning, it was recognised that there was a need to plan the provision of systems that will better support those who pursue education at a number of different stages of their life, or who move between institutions while pursuing a course of study, or who make use of resources and facilities from more than one institution.

The increasing use of MLEs within FE and HE institutions provided a context within which to explore the benefits of 'joined up' systems that are focused on the needs of the learner, delivering information through an individual student portal providing a single entry point to relevant learning and administrative resources.

Phase 2 of the programme aims to build on existing work through a range of projects that can capitalise on the outcomes of the activities finishing in July 2003, meet the wider objectives of the MLEs for Lifelong Learning programme and address some of the issues raised in the Phase 1 projects and supporting studies.

This overview provides a summary of the aims and objectives, main activities, outputs and issues raised in Phase 1. It is based on programme documentation, project interim reports, reports from the supporting studies, and other information published on programme and project websites.

Programme Aims, Objectives and Scope

The aim of the Building MLEs across FE and HE programme is to explore the issues related to developing learning environments to support the seamless movement of the learner between and across sectors and institutions.

The programme has the following specific objectives:

- To establish cross institutional architectures to transfer student record data
- To establish cross institutional architectures to deliver learning
- To explore the use of student learning profiles
- To measure and record the impact of cross-institutional systems on business processes of institutions
- To identify and address the implications for staff development
- To provide a formative development and dissemination process throughout the lifetime of the project which will engage the (JISC community) HE/FE sectors

In order to achieve these objectives and address the aim of the programme, proposals were initially sought from established consortia of HE institutions and FE colleges with a strong regional identity. Two consortium-based projects were selected for Phase 1 funding, one from an HE/FE consortium in the south-west of England (SHELL), and one proposed by a group of five HE institutions and FE colleges in Northern Ireland (NIIMLE).

Three supporting studies were also funded through the programme:

- Developing Learner Profiles across FE and HE
- Study of MLE Activities in FE and HE across the UK
- Study of Authentication Services

The Northern Ireland Integrated Managed Learning Environment (NIIMLE)

Consortium partners

Belfast Institute of Further & Higher Education (Lead Institution)

North Down & Ards Institute of Further & Higher Education

North West Institute of Further & Higher Education

Queen's University Belfast

University of Ulster

Project aims, objectives and scope

The main aim of the project is to build a cross-institutional MLE for the Northern Ireland region that facilitates the mobility of the lifelong learner and supports collaboration between FE and HE institutions. More specifically, the consortium's objective is to encourage students to see FE and HE in a more unified, holistic way – to look beyond the qualification for which they are enrolled and explore progression routes to higher and complementary studies, and thereafter to facilitate their continued movement within the sector. For students in the tertiary sector, the project will provide a regional portal to a range of services which students can use to inform their choices on future courses, progression routes and career paths.

The objectives of the project are:

- To create a MLE that will provide a communication and management system operating between the separate institutional MISs and VLEs
- To create a process for interchanging information between institutions
- To report on the usefulness of IMS standards in effecting interoperability between systems
- To provide case studies on the impact of the MLE on business processes (enrolment, communication, support, monitoring progress, tracking achievement, assisting progression)
- To evaluate the effectiveness of the MLE in tracking achievement and assisting progression

The set of services that the project is concerned with providing for students via a personalised portal includes:

Information on pathway and progression routes – using a specific subject area for the pilot, the NIIMLE will give students access to progression routes and subject pathways. By listing all possible options the NIIMLE will not only inform student progression, but will also address the area of student retention.

Careers information – this will be made available by the institution offering the next course, including information relating to employment opportunities, links to websites of potential employers and links to relevant professional bodies.

Academic and student mentoring – the institution providing the 'next' course will also provide an academic and/or student mentor. The service will be designed to help students make a more informed decision about their next step. The communication will be via a discussion forum. Student mentors will give snapshots of life at the next institution, while the academic will provide information related to course structure and content. This service will also be supported by a FAQs section.

Access to portable courses – the MLE will provide the ability to host course materials or entire courses, which may be general or subject specific. These portable courses will support colleges and universities in the sharing and reusing of learning materials and resources.

Information on the next course and next institution – more specific details about the next course will be available via the NIIMLE. Students will have access to information such as timetable, mode of attendance, reading lists, exams, pass marks and application procedures.

Transcript and Personal Development Planning (PDP) – students will have access to their transcript via the regional MLE. Where students have moved within the sector, the transcript will include qualifications from each institution attended. The MLE will provide a facility for a student to record his or her own thoughts and personal reflections during their academic life, contributing to their personal development planning.

Main activities

NIIMLE was formally launched in The Odyssey, Belfast on 11 February 2003.

The challenge at the outset of the project was to identify the set of services that the NIIMLE would deliver. These were designed to deliver the project's high level objectives as defined in the original funding proposal to JISC.

Senior management in the institutions and the representatives from the Department for Employment and Learning (DEL) are regularly appraised of the project's progress. This helps ensure that these key people remain actively committed to the project. Relationships were also developed with practitioners in the consortium institutions in all areas including PDP, careers, DPA, academic and technical staff. Following extensive consultation, the multimedia subject area was selected for the first trials

The project logo was created and the website set-up. Leaflets were designed and distributed and presentations given at various conferences and meetings.

uPortal was chosen as the framework for delivery of the NIIMLE services. A server was procured and installed on the QUB network with the necessary software. The first core data trial was carried out successfully in May 2003 with students from the North West Institute of Further & Higher Education, and further successful trials have also taken place in other consortium institutions.

Initial discussions took place in February 2003 to establish how best to approach the difficult area of data protection. As of August 2003 considerable progress has been made and legal documents can now begin to be drawn up.

Project outputs

The NIIMLE website (<http://www.niimle.ac.uk>) contains background information for the project and links to project documentation. Project outputs include:

- Reports of meetings and events, including project team meetings, meetings at consortium institutions, workshops and events
- DPA documentation detailing the processes required in order to achieve a consortium based DPA, and the approach recommended by the project team
- Technical Specification document including details pertaining to portal selection, definition of use cases and application profiles (pilot one core data) and the proposed data access architectures
- A portal rubric, used to score each of the four portal products considered for the project and assist the selection of the best portal for the needs of the project
- A portal developed and written specifically for the project as the interface for the users, available as a working model and illustrating the possibilities offered by using the portal as a delivery platform for the project

SHELL

Consortium partners

University of Plymouth (Lead institution)

Cornwall College

Exeter College

North Devon College

Somerset College of Arts and Technology

Project objectives and scope

The objectives of the SHELL project are:

- To provide long-term access via a portal to an accumulating lifelong learner record
- To achieve a single registration process
- To achieve rapid and efficient transfer of data between associated consortium institutions, including examination results
- To enable access to relevant learning materials at a partnership institution

Main activities

Work on the project has been broken down into four areas, with a team for each area:

- Learner Record and Personal Development Record (PDR)
- Business Analysis
- Technical
- Evaluation and Dissemination

Each team has a team leader and a representative from each consortium institution.

Learner Record Specification

This was the focus of much of the early work of the project. In many ways specification of the Learner Record and the specification of revised business processes form a cornerstone of the project. Together these provide the details of what is required to meet the main project objectives.

Revised Business Processes

The specification of revised business processes (Revised Business Processes v1.6) provides a description of the changes necessary to capture data in support of the Learner Record and to achieve the electronic transfer of data on partnership students between college and university. Final changes were made in May 2003 for consistency following 'walkthrough' meetings involving a wide range of staff and the specification has been approved by each consortium institution. Implementation of revised business processes is well underway, with plans having been prepared by the team leader in association with colleges and the University.

Technical Implementation

Development of the technical specifications was delayed early in the life of the project when the technical team leader resigned. After several months in which no technical progress was made, Phosphorix, in co-operation with ETL Solutions, undertook to provide the technical infrastructure. The technical infrastructure involves the Learner Record database, a portal for long-term access of the Learner Record, and the SHELL Hub which acts as the centre of IMS message exchange within the consortium.

The original intention was that consortium student record system suppliers would produce an IMS interface between their systems and the hub. In practice, none of the suppliers involved with the project have so far followed through with this, but Phosphorix, again in co-operation with ETL

Solutions, undertook to develop a generic IMS data transfer system (ioAgent) which could be purchased by consortium members. Three colleges and the University have decided to acquire ioAgent using project funds; one college has decided to stick more closely to the original plan in planning to develop its own IMS interface to the hub.

Even when ioAgent is used, however, a more limited piece of code called a 'plug-in' is required for final linkage to the student record database. It was hoped that suppliers would carry out this more limited development, but no student record system supplier has so far undertaken to do this development within the timescales of the first phase of the project, leaving this development to be carried out by consortium members. Capita has offered the use of its UNITE toolset which reduces the amount of effort, but does not have development resources available this year.

Phosphorix and ETL Solutions have completed a specification for direct communication with the SHELL hub and for communication with a local ioAgent (Communication with the SHELL Hub v1.3). This is aimed at both those developing an entire IMS interface and those developing a plug-in.

Evaluation and dissemination

Project reports and outputs have been made available on the project website. The project dissemination strategy includes the development of partner case studies.

The project evaluation has the following elements: intended audiences, evaluation objectives, process, quality assurance of deliverables, formative assessment, evaluation of impact, and key actions. An interim project evaluation report was produced for consultation in July 2003.

Project outputs

- Specification of the accumulating lifelong learner record (Learner Record v1.6), approved by each consortium member and by the Centre for Recording Achievement which promotes national standards for the production of student transcripts
- Specification of revised business processes (Revised Business Processes v1.6)
- Specification for direct communication with the SHELL hub and for communication with a local ioAgent (Communication with the SHELL Hub v1.3)
- Generic IMS data transfer system (ioAgent)
- Dissemination strategy
- Partner case studies
- Evaluation strategy
- Interim evaluation report

Developing Learner Profiles across FE and HE

Project aims and objectives

This project was directed by the Centre for Recording Achievement (CRA). The overall aim of the project was to support cross-sectoral development in IT based Learner Profiling systems that are based upon, and congruent with, good pedagogic practice.

The objectives were as follows:

- To undertake a study of existing work and requirements for Learner Profiles
- To carry out an investigation of available software for Learner Development
- To undertake structured consultation and engagement with the FE/HE community in generic models for Learner Development and Learner Profiles
- To produce the specification(s) of the learning development profile, in particular by extending the mapping to LIP of the learner information domain to include Personal Development Record (PDR) information, within the context of other IMS specifications

- To test and implement the PDR specification with established software tools (developed in institutions outside the current projects)
- To support the two projects funded under the 01/01 programme
- To ensure that developments are centred upon the learner's needs and of generic value to the sector

Main activities

Work was built around three major packages of work, the third of continues currently:

Work package 1 was concerned to:

- Inform a range of relevant professional and technical communities about the work of the project
- Update knowledge and understanding of the functionality of currently available PDP/PDR software.
- Draw together a representative range of PDP/PDR practice from FE and HE in order to identify generic models, user requirements and the extent these are currently met.
- Provide documents for further consultation and recommendations for further action.
- Fit alongside the work of the LIPSIG (Learner Information Profiling Special Interest Group), to the mutual benefit of both.

Work Package 2 was concerned with:

- consultation & engagement with the FE / HE community in generic models for Learner Development and Learner Profiles; and
- the specification(s) of the learning development profile.

Work Package 3 is concerned with piloting aspects of learning profiling software to use the specification.

Project outputs

UK Learner Profile Version 1.1

This study mapping the minimum dataset for the UK HE transcript, together with the European Diploma supplement to IMS LIP 1.0, was concerned with presenting a common means of exchanging transcript information as an integral part of the UK HE Progress File in order to support the development of students as autonomous lifelong learners and as a first step toward establishing fuller Learner Profiles across FE and HE in order to support shared learning and transitions.

Consultation Document – Mapping Personal Development Records to IMS LIP to support Lifelong Learning

This document summarises work being carried out to extend the mapping of the UK Progress File beyond the transcript to PDRs in order to support shared learning and transitions between FE and HE. It builds upon the work presented as UK Learner Profile 1.1 and leads towards UK Learner Profile 1.2, to be published in Spring 2004. This initial mapping of PDP to the IMS LIP specification has also provided a means for work to demonstrate 'proof of concept' with existing and emerging software tools in respect of interoperability.

Consultation Document – LIP Baseline Pack

This briefing draws on and updates a variety of published documents to offer an introduction to an emerging standard record of Lifelong Learning, and will provide the basis for a more structured consultation process in the autumn of 2003.

PDP and IT: A Guide for Busy Managers

This short information note draws upon wider project experience and was produced following a dissemination event.

In addition, the project has:

- Directly supported the JISC programme and its management
 - Contributed to the work of the funded projects via Programme meetings and upon request, and to the briefing work for the 0103 call
- Built up groundwork of knowledge and models of the PDP/R domains
 - Updated knowledge and understanding of the functionality of currently available PDP/R software and its potential relationships with other objects and processes within an MLE
 - Consolidated and extended consultation with PDP practitioners in post-14 education and within HE in order to identify generic models, user requirements and the extent these are currently met
 - Modelled the domain of PDP/R in terms of generic PDP activities and generic PDP output parts, forming the 'gridlines' onto which particular PDP processes and systems can be mapped, also enabling comparison with the functionality of ICT systems supporting PDP
 - Extended and tested this grid through the actual mapping of examples of PDP practice, and ICT systems supporting it
- Developed and piloted tools and methods for future work
 - Used this grid to underpin a website presenting the examples to the community, helping them to understand the structure both of PDP practice and ICT systems to support it, thus building the basic shared understanding necessary for the later development of consensus
 - Piloted a training session to help users get maximum benefit from the site
 - Developed a 'typical purposes' template that can be used as a basis for the classification of use cases and the content of PDRs
- Contributed to standards activity
 - Provided an initial mapping of PDP to the IMS LIP specification, as a means for further work to demonstrate 'proof of concept' with existing and emerging software tools in respect of interoperability.

Study of MLE Activities in FE and HE across the UK

Background

This study was commissioned by the JISC and the Universities and Colleges Information Systems Association (UCISA) in August 2002 from a consortium of research organisations led by the Social Informatics Research Unit at the University of Brighton. The study was intended to identify and analyse the current picture in UK FE and HE institutions with regard to issues of integration of business processes, services and systems in support of learning and teaching.

Objectives

There were four key objectives for the study:

- To provide a definition or set of definitions of what constitutes MLE activity
- To undertake a general survey of current and planned MLE activity (adhering to the agreed definitions) across a wide range of institutions across the UK FE and HE sectors including small and large colleges, new and old universities to build up a general description of the progress towards MLE across the UK

- To provide an analysis of the outcomes of the survey to investigate whether there are consistent patterns of MLE use according to specific factors such as the type of institution
- To develop a series of in depth case studies of successful and unsuccessful MLE implementation that covers the range of institution types identified above

Conclusions

The study indicates that there is, overall, a sense that MLE development is a 'good thing' and a strong consensus that MLEs are the way forward and will provide long-term advantages. At the same time, however, there is a suspicion that, because everyone else is going down this road, institutions must follow or be left behind.

What is not broadly apparent is any real sense that the MLE is as yet fully embedded in the institutions' strategic and operational frameworks.

'Enhancing the quality of teaching and learning' is the key driver, identified by almost every institution, for MLE development. However, the reality appears to be that the student experience is being enhanced through improved delivery of teaching materials and course announcements, improved access to learning resources and better communication. Pedagogical issues are not (yet) a part of this, and, indeed, appear to have been of secondary concern until now.

The scale of the task is clearly daunting to many institutions. There is a growing awareness of how large are the training and professional development needs, not only in relation to pedagogy and curriculum change, IT skills and awareness, but also in relation to wider 'cultural change' issues as the MLE develops and rolls out across the institution.

Increasing concern is in evidence about the uneven quality of learning and other materials, much of which is home-grown or sourced on the Internet and being 'dumped' on the systems with no observation of or opportunity for quality control procedures.

Summary of recommendations

The study recommends that procedures and guidance on learning materials quality control is as an area for further study and practical guidance by JISC. The new approaches to teaching and course delivery demanded by the implementation of MLEs bring with them the requirement for a critical mass of electronic content related to subjects and courses. This mass of content does not currently exist.

It is recommended that JISC promote 'joined-up thinking' around the issue of structured learning content for the new learning environments, by bringing together the interests and attention of those groups under the JISC umbrella focusing concurrently on e-books, e-textbooks, MLE development and VLE use in FE and HE. Institutions across the sector appear to have consulted widely with other educational institutions in the early stages of MLE development, but rarely turns into collaboration once the implementation stage begins. Many individuals consulted during this research said how valuable it is in MLE development to be able read case studies from other institutions and to consult and work with others following similar developmental paths.

The study recommends that JISC maintain and expand its efforts to promote collaboration, not only in IT and technology related areas, but also in content development and pedagogical issues.

It also recommends to JISC that the research instruments and outcomes of this study should be developed into a web-based benchmarking tool for institutions which will contribute to collaboration and sharing of experience across the sector.

Study of Authentication Services

This study set out to help identify the access management requirements for the MLEs for Lifelong Learning Programme, and to analyse the potential value of five different access management models relevant to the programme: Athens Devolved Authentication (AthensDA), A-Select, Liberty Alliance, Shibboleth, and Singlesignon.net.

The study was carried out by staff at the London School of Economics, and involved:

- a detailed study of each of the proposed solutions
- a detailed study of the requirements of the projects
- analysis of additional issues and concerns for the projects

While the importance of finding a solution that meets project requirements was recognised, it is the third area that emerged as likely to have the biggest impact on solution choice. A range of influences that can affect product choice beyond basic requirements matching were identified, including national influences, programme influences, institutional influences and changing project requirements.

The study addresses generic requirements for access management for lifelong learning, including security, privacy, practicality, scalability, simplicity, appropriateness, distributed application, realism and wide adoption. It offers a mapping of solutions to generic requirements, an overview of the issues and considerations raised by the different access management models under consideration, and an account of the requirements specified and solutions proposed by the SHELL and NIIMLE projects.

The study notes that all of the solutions under consideration are in fairly early stages of development and roll-out. The solution must contribute to the future of both institutional and national developments, and need for projects to recognise future requirements along with immediate implementation needs is emphasised.

MLE Evaluation Team

The MLE Evaluation Team was established as a group of experts to oversee the two projects funded under the 01-01 MLEs for Lifelong Learning programme. The team undertook the role of Steering/Advisory group to the programme, and some additional roles including:

- Development of the programme evaluation framework
- Overseeing the formative evaluation of the projects, including buddy visits to projects and feedback to projects
- Attendance and participation in programme meetings
- Review and feedback on reports and project outputs
- Development of ITTs for supporting studies and the circular for the 01-03 Phase 2 call
- Marking and selection of proposals for supporting studies and projects under the 01-03 Phase 2 call

The MLE Evaluation Team was therefore instrumental in the development of the specific objectives for Phase 2 of the MLEs for Lifelong Learning Programme (01/03), which is scheduled to run from July 2003 to July 2005:

- To explore the learning, teaching and administrative implications of implementing MLE activities to support lifelong learners on cross-institutional programmes of study
- To explore interoperability for lifelong learning, specifically in the areas of linking learner information between managed learning environments and awarding bodies, external learning organisations and employers
- To explore the learning and teaching implications of using a lifelong learning profile

- To explore and test the use of learner information packages to support seamless learner transition between institutions. This work will build on the outcomes of the phase one projects.

These objectives are being addressed in Phase 2 by the continuing activities of SHELL and NIIMLE, and nine further consortium-based projects.

Sources of Information

JISC Managed Learning Environments	http://www.jisc.ac.uk/index.cfm?name=mle_home
01/01 Programme	http://www.jisc.ac.uk/index.cfm?name=programme_buildmle_hefe
NIIMLE	http://www.niimle.ac.uk/
SHELL	http://www.shellproject.net/
Developing Learner Profiles across FE and HE	http://www.cetis.ac.uk/members/PDPcontent
Study of MLE Activities in FE and HE across the UK	http://www.jisc.ac.uk/project_mle_activity.html
Study of Authentication Services	http://www.angel.ac.uk/accessmanagement/jisc_as/
CRA	http://www.recordingachievement.org/