

# JISC DEVELOPMENT PROGRAMMES

## Enhancing Learner Progression

### *Final Report*

#### Project

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# Enhancing Learner Progression (ELP) Final Report

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Web links:

- ELP project web site [www.elp.ac.uk](http://www.elp.ac.uk)
- JISC [www.jisc.ac.uk](http://www.jisc.ac.uk)
- DeL Programme [www.jisc.ac.uk/whatwedo/programmes/programme\\_edistributed.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed.aspx)
- DeL Regional Pilots [www.jisc.ac.uk/whatwedo/programmes/programme\\_edistributed/pilotsdetail.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/pilotsdetail.aspx)
- The Yorkshire Medical Deanery, <http://www.yorkshiredanery.com/default.aspx>

# 1 Background

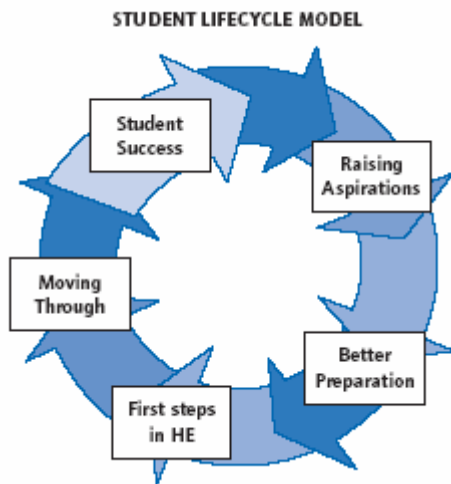
The use of e-Portfolios in support of learning and teaching is rapidly increasing in the 14-19, HE, Adult, Community and Lifelong Learning sectors in the UK (Beetham, 2005). This expansion is being driven by national policies including the Tomlinson Report (2004), the DfES e-Learning Strategy (2005), HEFCE e-Learning Strategy (2005), and Universities UK (2003). The current premise of these strategies is that

*"Progress Files help make the outcomes, or results, of learning ... more explicit, identify the achievements of learning, and support the concept that learning is a lifetime activity"* (Universities UK, 2003, Progress Files for Higher Education)

The Enhancing Learner Progression (ELP) project grew out of the project partners' commitment to widening participation in Higher Education and lifelong learning. The partners wanted to exploit and evaluate the considerable potential offered by e-portfolios to engage increasing numbers of learners in more flexible and accessible ways through their lifelong learning journey, delivering support effectively and efficiently. The Distributed e-Learning Regional Pilots funding offered by the JISC along with the regional focus of the programme gave the partners the opportunity to achieve this through their existing regional partnerships.

The **Student Lifecycle Model** adopted by HEFCE (2001, p15), shown in the diagram in Figure 1 below, suggested the focus of the project - using e-Portfolios to support students at key transition points in their lifelong learning journey. This HEFCE model sets targets in five key areas which are essential to the success of widening participation: raising aspirations, better preparation, first steps in HE, moving through, and student success (summarised in the table in Figure 2 below). Support is particularly critical at these transition points.

**Figure 1: Diagram of Student Lifecycle Model**



**Figure 2: Key stages of student lifecycle module**

Student Lifecycle Model five stages	
1.	<b>Raising aspirations</b> (from primary school age upwards, including adults)
2.	<b>Better preparation/pre-entry support</b> (raising attainment to aid transition from school/FE to higher education)
3.	<b>First steps in higher education</b> (including induction programmes and assessment of key skills)
4.	<b>Moving through the system</b> (supporting students)
5.	<b>Student success/employability</b> (achievement and preparation for work)

The ELP project chose to evaluate the potential of e-portfolios in supporting students at three of these key transitions points:

1. **Access to Higher Education** from school and further education (stages 1 and 2 of the lifecycle, Figure 2)
2. **Transfer to work-place settings** from university for employment, placement or vocational/professional training (stages 4 and 5 of the lifecycle, Figure 2).
3. **Transfer between institutions** by moving between courses (stage 4 of the lifecycle, Figure 2).

Each of these transfer points addresses a very specific, self-contained and substantial context. This resulted in a complex project structure comprising three contexts, six case studies and two different technical platforms. So, in order to provide coherence and structure to our findings, we have chosen to report on each context individually before drawing out general lessons learned across the project.

Section 2 reports on the project aims and objectives, Section 3 reports on the overall project methodology and **Sections ??? to ???** report individually for each context, its individual aims and objectives, methodology, implementation, outputs and results, outcomes, conclusions, implications and recommendations. The final sections of the report draw out common issues, findings and outcomes across the contexts and use cases.

The Enhancing Learner Progression Project ran from 1 March 2005 until 31 December 2006. This report covers both the original project funding from 1 March 2005 until 30 June 2006 and the continuation funding from 1 July to 31 December 2006.

All of the outputs from the project are available from the project web site at <http://www.elp.ac.uk>.

## **2 Project Aims and Objectives**

This section reports on the overall project aims and objectives. This covers both the original project (March 2005 to June 2006) and the continuation period (July to December 2006).

### **2.1 Aims**

At a project level, ELP aimed to evaluate the application and potential of e-portfolios in supporting learners through their lifelong learning journey, with particular emphasis on the ways that e-portfolios can provide support at the key transition points (or contexts) in this journey: access to Higher Education, transfer to work-place settings, transfer between institutions and courses.

The aim of the continuation period was to embed the e-portfolio use into the partners' institutional policies and practices, particularly in support the first key transition point: Access to Higher Education (Context 1).

### **2.2 Original objectives**

The original project objectives (1 March 2005 until 30 June 2006) addressed exploring the use e-portfolios at each of the key transition points and, across the project, ELP sought to investigate and evaluate:

1. The use and usability of the e-portfolio tools (PebblePad and Bodington LogBook).
2. The role and effectiveness of e-portfolios in supporting lifelong learning and student progression.
3. Staff and student development.
4. Interoperability of data between the two e-portfolios tools (PebblePad and Bodington Logbook).

### **2.3 Continuation objectives**

The additional funding provided by the JISC extended the project by six months from 1 July to 31 December 2006 allowing us to adapt and refine our 'pilot' implementations by integrating the lessons learned from the original ELP evaluation and the evaluations of other DeL projects. This short extension was important in allowing us to initiate second round of cohorts in Context 1: Access to HE and Context 2: Transfer to workplace setting, that enabled us to:

1. Verify the sustainability of our approach through engaging with new participating institutions and greater numbers of participants while simultaneously decreasing project support and increasing support from within the partner institutions.
2. Confirm the validity of the ELP findings and recommendations through re-evaluating a sample of the second cohort.
3. Follow-up and further explore any unanticipated findings from the ELP evaluation.
4. More accurately report on the 'impact' of the use of e-Portfolios in enabling students to access HE (Context 1) by following up on participants success in gaining admission to University.
5. Qualitatively examine an aspect of the process not previously considered - the role and impact of mentors in widening participation (Context 1).
6. Disseminate our findings to a broader range of regional and national audiences.

### **2.4 Achievements**

The project has achieved its original aims and objectives, as outlined in the original project plan (Higgison, May 2005) which covered the period 1 March 2005 until 30 June 2006 (including extension using existing funds).

The project continuation (1 July 2006 to 31 December 2006) allowed us to achieve our primary aims of completing the evaluations and ensuring that the findings inform the current and future working practices within the partner institutions and externally. The project was successful in achieving all our continuation objectives except number five – the role of mentors. It did not prove possible to engage mentors within Contest 1, Access to HE within the continuation timescale because the identified group of learners were not available due to the illness of our contact in the school during this period. The outputs from this continuation have been integrated into the six project case studies.

The project findings, outputs, use cases, guidance, outcomes, publications and presentations are available from the project web site at <http://www.elp.ac.uk>.

### 3 Project Methodology

We chose a case study methodology (Yin, 2003) as the most appropriate method to capture the complex and rich stories of learner experiences across these three diverse contexts, each of which addresses a key transition point in the Student Lifecycle (HEFCE, 2001) using different technological solutions.

Timescales, actions, outputs and responsibilities were outlined and delegated to the partner institutions. An organised approach was taken to choose and develop the **technology**, identify **the participants** and put in place an **evaluation strategy** including timescales, tools and activities.

The technology and participant issues are discussed in Section 7 below. The ELP evaluation strategy is discussed in Section 3.2 below.

#### 3.1 Use Case Scenarios

Six **use cases** were identified across the three contexts using two different technical platforms (PebblePad and Boddington LogBook).

**Error! Not a valid bookmark self-reference.** below provides a summary of the six use cases investigated as part of the project. Each potential case study was reasonably self-contained with little overlap or interaction between them, resulting in discrete work packages for different aspects created in each partner institution and across each of the three contexts. The full case studies are available online at <http://www.elp.ac.uk/casestudies.html>.

Figure 3: ELP Use Case Scenarios

Context	Case study	Partners	Audience	Module content	Dates	No. of students	E-Portfolio platform
1 Access to HE from School or FE college.	1	Bradford and 3 school 6 <sup>th</sup> forms	All pupils any subject	Generic Access to HE	Sept 05 to June 06	65	PebblePad
	2	Leeds Met and 2 FE colleges	Students on ICT modules	Generic Access to HE	Sept 05 to June 06	120	PebblePad
	3	Leeds and 4 FE colleges  Leeds and 2 FE colleges and 3 school 6 <sup>th</sup> forms	Students interested in Medicine and Healthcare  Students interested in Medicine and Healthcare	Discipline specific Access to HE Supported by (student) e-mentors  Discipline specific Access to HE supported by careers adviser and mentors	July 05 to Dec 05  Feb 06 to Dec 06	49  92	Boddington Logbook  Boddington Logbook
2 HE to a Work-based setting	4	Leeds and 1 hospital	PRHOs <sup>1</sup> Post-graduate work based training	'Foundation Years Training' supported by Educational Supervisors	Aug 05 to July 06	33	Boddington Logbook
	5	2 courses: post-graduate and under-graduate nursing degrees @ Leeds	Nursing students Development of professional competence	Progress file. Recording of professional competencies from placement reports. Supported by tutors and mentors on placements.	July 05 to June 06	31	Boddington Logbook

Context	Case study	Partners	Audience	Module content	Dates	No. of students	E-Portfolio platform
3 Transfer between HEs	6	Bradford (and Leeds) Universities	Life Science students - WP opportunities to access medical degree	PDP	Sept 05 to June 06	18	PebblePad with potential transfer to Bodington Logbook

### 3.2 Evaluation

Early discussions with the Steering Group (Sept 2005) suggested that the initial evaluation plan was too complex. Based on their guidance and discussions with two other DeL projects (MyWorld and FilePASS) we decided that the principle focus of the evaluation would be to determine the impact of using e-portfolios, in various contexts and for various purposes, on the learner and those responsible for helping the learner, for example, tutors, supervisors, mentors. If our use of e-portfolios is to become prevalent then it is important that we understand the impact of using such tools for learners, practitioners and institutions. Sharpe (2006) noted that recent reviews of the literature and current status of e-portfolios suggests that there are gaps in our knowledge about the educational uses of e-portfolios and embedding of e-portfolio tools (Siemens, 2004) and users' and practitioners' perspectives (Richardson and Ward, 2005). We believe that case studies are able to convey the data to the intended audience in an understandable format and will set the outcomes specifically within the different contexts and e-portfolio products.

The ELP evaluation, informed by the DeL MyWorld<sup>1</sup> project evaluation strategy (Sharpe, 2005), aims to provide a useful perspective for the JISC and wider educational communities on these issues. The evaluation strategy has been designed to gather data to focus on three aspects: **experiences**, **enrichments**, and **implementation**. Within each of these foci, we aim to answer the following questions as shown in Figure 4 below.

Figure 4 ELP Evaluation Questions

Focus	Question
<b>Experiences</b>	What is the experience of learners and practitioners of using an e-portfolio tool? <ul style="list-style-type: none"> <li>➤ The ease of use of the software and the structure and content of the materials within the e-portfolio.</li> </ul>
<b>Enrichments</b>	What use has been made of the e-portfolio tools to enrich the teaching and learning experiences at different stages of the lifecycle model? <ul style="list-style-type: none"> <li>➤ Any changes in learning style which have arisen from the use of the e-portfolio.</li> <li>➤ Views on the use of e-portfolios and technology for learning.</li> </ul>
<b>Implementation</b>	How have the e-portfolios been implemented in the different contextual case studies and their institutions? <ul style="list-style-type: none"> <li>➤ Factors which affected engagement with and usage of the e-portfolio tool.</li> </ul>

These questions were examined in the within the specific contexts and use cases identified. In each case, the learner was using the e-portfolio for a different purpose or in a different way. In some cases we had the additional advantage of being able to research the difference between electronic and non-

<sup>1</sup>, [http://www.jisc.ac.uk/whatwedo/programmes/programme\\_edistributed/myworld.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/myworld.aspx) (accessed 15 Jan 2007)

electronic usage of e-portfolios where a control group was available to enable us to explore the differences in outcomes and learning (cases four and five).

The evaluation of the project was carried out at pre-use, formative and summative points of the project. The evaluation was carried out using online surveys, focus groups and semi-structured interviews. Users, non-users, their supporters, education supervisors, stakeholders and tutors were involved in the evaluation process. Each case study was evaluated using a similar approach and instrument.

- **Learners:** A pre-questionnaire and/or a mid-point questionnaire and/or focus group, a post-questionnaire and/or focus group.
- **Staff** (tutors, supervisors, mentors, and guidance and careers counsellors): a pre-questionnaire and/or a mid-point interview/focus group, and/or a post-questionnaire and/or focus group.

The evaluation questionnaires and focus group scripts for the different use cases can be found on the project web site at <http://www.elp.ac.uk/casestudies.html>.

## 4 Context 1 – Access to Higher Education

Context 1 aimed to explore the use of e-portfolios to facilitate widening participation of 13 to 19 year olds in higher education within the region. It involved all three partner institutions and built on their existing widening participation schemes:

- Compact @ the University of Bradford (<http://www.brad.ac.uk/admin/compact/>);
- University of Leeds Access Academy (<http://www.leeds.ac.uk/accessacademy/index.htm>);
- Access Institute @ Leeds Metropolitan University (<http://www.lmu.ac.uk/metoffice/access/strategy/index.htm>)

### 4.1 Access to HE aims and objectives

This section lists the project aim and objectives in relation to access to higher education.

#### 4.1.1 Access to HE aims

The original aims of ELP in relation to this context were to:

- Improve access to higher education by providing an integrated e-support environment, with a focus on personal development planning and recording (e-PDP and e-portfolios), for steps 1 and 2 of the student lifecycle – raising aspirations and better preparation and pre-entry support,
- Ensure this support is compatible with the procedures adopted by regional HE institutions in step 3 of the student lifecycle – first steps in HE.

An additional aim of the ELP continuation phase was to:

- Embed the e-portfolio use into the partners' institutional policies and practices.

#### 4.1.2 Access to HE objectives

The original objectives of ELP in the access to HE context were to implement and evaluate common tools that:

- a. Enhanced the capacity building of individuals and groups through the effective use of e-portfolios to assist learners to access, piece together and manage their learning in a range of institutional and informal settings. ✓
- b. Facilitated wider participation in HE through raising aspirations and attainment by providing learners with:
  - a more seamless learning experience, ✓
  - better learning tools, ✓
  - easier access to personal learning planning and portfolios. ✓
- c. Supported and developed staff (and learners) by providing guidance on how to mentor and guide learners using these e-Learning systems and resources. ✓
- d. Support greater communication, collaboration and information interchange across the consortium. ✓

The objectives of this ELP continuation (additional funding) project were to

- e. Finalise and publish the revised and updated e-Portfolio support at each partner institution. ✓
- f. Expand the delivery of these activities to a wider range of schools and FE Colleges and an increased number of participants. ✓
- g. Initiate updated staff and student training and support. ✓
- h. Evaluate the 'success' the first cohort participants in transferring to HE (Oct to Dec 2006). ✓

- i. Evaluate a small-scale trial of the impact of e-mentor support on e-Portfolio implementations.

X

We achieved the majority of the objectives outline for Context 1 with two exceptions noted below.

Due the very different organisational structures and implementation of access/compact schemes at each partner institution we were unable to address two objectives in Context 1: sharing materials and resources; and creating a wider community of learners across different partner institutions. We were successful in developing a community of practice amongst the project partners and staff directly involved did develop as a community of learners and achieved a productive exchange of experiences and increased capacity in our knowledge and understanding of Context 1 as well as using e-portfolios to support WP.

#### 4.1.3 Access to HE achievements

The project successfully achieved its main aims and objectives to provide e-support for access to HE in all three partner institutions. We also feel we achieved the main aim of project continuation but in a different form. At Bradford (CS1), the new module has been adopted by the University and is included in those available through the University Compact scheme and is being delivered and supported by the University's Access and Widening Participation Team. Leeds Met (CS2) is using the experiences and evaluation to inform their review of the Progression module and its future delivery. Similarly Leeds Medical School (CS3) is using the ELP experiences to inform its ongoing access activities using social software and Web 2.0 technologies.

All partners engaged more learners in their widening participation activities than originally targeted with considerable success achieved by those learners who completed the widening participation activities, as measured by their success in achieving the learning outcomes and passing the access module (Bradford and Leeds Metropolitan) or achieving an offer of a University place in an extremely competitive and oversubscribed area, ie medicine or health related subjects (Leeds access programme, see CS 3) and making informed choices about their future education choices. Please see Case Studies 1 to 3 (CS 1 to 3) <http://www.elp.ac.uk/casestudies.html> for full details.

Finally, the ELP consortium has been successful in obtaining funding under the JISC e-Learning Capital Programme: e-Learning strand and we will be addressing the issue of regional communities of practice as part of our Enhancing Learner Progression through the Use of Personalised Learning Environments Project (ELP2 online at <http://www.elp2.ac.uk>).

## 4.2 Access to HE methodology

As discussed in Section 3 above on the project methodology, ELP decided on a case study approach. Figure 5 below summarises the ELP focii in providing e-support for access to higher education cases.

**Figure 5: Focus of Context 1 - Access to HE (main focus in bold type)**

Student Lifecycle Model stages	e-Support for Access to HE
1. Raising aspirations (from primary school age upwards, including adults)	<b>e-community, e-mentoring, e-evidence from previous attainers.</b>
2. Better preparation/pre-entry support (raising attainment to aid transition from school to higher education)	<b>Permanent, accessible, ongoing recording of achievement – e-portfolio: which aids accreditation of learning, completion of UCAS form, writing CVs and personal statements, helps students analyse strengths and weaknesses, supports development of Key Skills</b>
3. First steps in higher education (including induction programmes and assessment of key skills)	Student brings an ongoing record of achievement which can be extended and expanded throughout their HE career.

### 4.2.1 Selecting access to HE Case Studies

This context contains three case studies, each documenting the project innovations in supporting widening participation at a project partner institution as summarised in the table in Figure 6 below.

Selecting participants for these case studies was devolved to each partner institution. All three partners decided to select schools and/or colleges that participated regularly in their widening participation activities and with which they already had an existing relationship. From these institutions participants were chosen who met the partner's institutional criteria for widening participation.

Bradford and Leeds Metropolitan Universities targeted students from non-traditional groups and those with no previous family tradition of progressing to HE. Leeds University targeted high achieving students from under-represented groups who would not normally consider applying for the highly competitive areas of medicine and other health related subjects.

All external schools and colleges taking part in the access to HE context were paid £1500 to cover staff time and development for the duration of the pilot.

**Figure 6: Case Studies on Access to Higher Education (Context 1)**

Case study	Partners	Audience	Module content	Dates	No. of students	E-Portfolio platform
CS1	Bradford and 3 school 6 <sup>th</sup> forms	All pupils any subject	Generic Access to HE	Sept 05 to June 06	65	PebblePad
CS2	Leeds Met and 2 FE colleges	Students on ICT modules	Generic Access to HE	Sept 05 to June 06	120	PebblePad
CS3	Leeds and 4 FE colleges	Students interested in Medicine and Healthcare	Discipline specific Access to HE supported by (student) e-mentors	July 05 to Dec 05	49	Bodington Logbook
	Leeds and 2 FE colleges and 3 school 6 <sup>th</sup> forms	Students interested in Medicine and Healthcare	Discipline specific Access to HE supported by careers adviser and mentors	Feb 06 to Dec 06	92	Bodington Logbook

### 4.2.2 Access to HE technology

Leeds University selected the Bodington Logbook tool, developed under the JISC Distributed e-Learning (DeL) Tools Programme, Phase 1.

Bradford and Leeds Metropolitan Universities originally planned to use the ePortfolio Extension Toolkit (e-Pet) from the University of Newcastle, also developed with funding from the JISC DeL Tools Programme Phase 1. However after seeing presentations of ePet and a relatively new product called PebblePad developed by the University of Wolverhampton, we felt that the more polished look and feel of the PebblePad interface would be more appealing and engaging to users in the target age range of 13 to 19.

### 4.2.3 Access to HE evaluation

Within the project evaluation framework of experiences, enrichments and implementation, in the access to HE context ELP aimed to evaluate:

- whether students are better prepared for transition into Higher Education (enrichments),
- what effect e-portfolios and related activities have on aspirations and entry into HE (experiences and enrichments),
- what aspects of e-portfolios aid pre-entry support (experiences),
- What factors affected the engagement with and use of the e-portfolio tools (implementation),

These questions were examined in the within the access to HE use cases identified. In each case, the learner was using the e-portfolio for a different purpose or in a different way. The evaluation was carried out at pre-use, formative and summative points of the learner activities using online surveys, focus groups and semi-structured interviews. Users, non-users, their supporters, education supervisors, stakeholders and tutors were involved in the evaluation process. Each case study was evaluated using a similar approach and instrument.

- **Learners:** A pre-questionnaire, a mid-point questionnaire and/or focus group, a post-questionnaire and/or focus group.
- **Staff** (tutors, supervisors, mentors, guidance and careers counsellors): a pre-questionnaire, a mid-point interview/focus group, a post-questionnaire and/or focus group.

The evaluation questionnaires and focus group scripts for the different use cases can be found on the project web site at <http://www.elp.ac.uk/casestudies.html>.

### 4.3 Access to HE Implementation

Implementing the use of e-portfolios to support access to HE involved selecting appropriate participants, providing access to the technology, and creating learning materials and developing the activities contained in the e-portfolio. Creating these materials required a collaborative and creative approach and materials were developed from both pre-existing products, existing good practice in careers education and from original ideas.

#### 4.3.1 Case Study 1 – Supporting Access to HE at Bradford University

**The Access Module:** Bradford University developed a new, 5 credit, level zero module called "IT Skills and PDP". The module was designed to complement existing Compact Scheme modules, but it could be delivered at a distance by exploiting the features of the e-Portfolio, rather than being delivered face-to-face during the already crowded summer school. Students who pass these modules gain additional points towards any UCAS application to Bradford University.

Contact was made, in July 2005, with heads of sixth form at four schools in the Bradford district to identify students in Year 12 who would benefit from help in preparing them for University application. Three schools were able to identify groups of students (65) and a member of teaching staff who would co-ordinate the e-portfolio work in the school.

In September 2005, staff co-ordinators were asked to check that the e-portfolio system would work on their student network and the students were introduced to the system in an hour long hands-on training session in October 2005. Paper based support materials (worksheets, handbook) were provided for students. The aim was that students would work through the structured module activities recording their achievements, evidence and plans using the e-portfolio in their own time with the help of the materials and their school co-ordinator.

In the first few months, students had not made the expected progress with the e-portfolio work. This was due to time pressures for the students and the lack of formal time in school to do the work. A highly success formal get together of all 65 students was held at the University of Bradford to provide renewed impetus and to get students more focussed on the importance of the higher education application process and how they could help present themselves in the best possible way.

Schools also provided formal time for students to do the e-portfolio work. The form this took varied with each school; a 50 minute drop-in session once a week after school, 30 minutes once a week during tutor time (where possible) plus some extra catch-up sessions and part of a 3 hour IT teaching session. These sessions also meant that the school co-ordinator could facilitate the students' progress and be around to offer advice in terms of the content of the work in the e-portfolio.

Technical problems continued to arise throughout the project, mainly due to the schools' firewalls and their staff's lack of technical expertise. For example, in one school, they changed the firewall towards the end of the project resulting in participants being unable to access their portfolios from school; this only affected student computers, not those used by staff. Technical issues related to the e-portfolio were dealt with by the project officer either directly or via the school co-ordinator. Good communication between the school co-ordinator and the project team was vital in being able to deal with problems quickly and minimise the frustration of the students and their teacher.

Student portfolios were completed in June 2006 and assessed by school staff with support from the University.

The e-portfolio module is now being offered to all Bradford schools as a part of the suite of Compact scheme modules. For the 2006/7 academic year, all of the pilot schools are involved with an increased number of students taking part without any financial incentives. One additional school is taking part this year with all students in year 12 studying advanced level courses offered the chance to take part. Two further schools have expressed an interest but have not yet taken part. Finally, the experiences and findings of the ELP project are informing the University's decision regarding an institutional e-Portfolio tool.

### 4.3.2 Case Study 2 – Supporting Access to HE at Leeds Metropolitan University

Leeds Metropolitan University had an established and successful access module, the **Progression Module**. Colleges who had in previous years worked with the paper based Progression Module were approached in July 2005 and asked if they wanted to pilot an online version of the module using an e-portfolio rather than a paper-based portfolio. Two cohorts of students who were studying IT courses were chosen because of the tutors own IT interests and the likely appeal to IT students of being able to do it all online rather than having to print out a paper copy.

Training was given to staff in August / September 2006 in how to use the e-portfolio in the context of the module.

In one college the timetable had not been finalised and two members of staff who were subsequently appointed to deliver the module via e-portfolio were not able to participate in the original training. These staff members were not given a choice in terms of their participation. In CS1 and the other CS2 cohorts, the tutors had volunteered to use the e-portfolio and this had a perceptible impact on the tutors and students attitude and motivation to undertake the e-portfolio activities. Two other issues emerged from this study.

The first issue to surface was about ownership and control of e-portfolio. The PebblePAD e-portfolio system used in this study is owned and controlled by the learner and not the institution. However, tutors felt that they needed to be able to know how much work students had put into the portfolio and whether they were keeping up to date via the e-portfolio system. This was not directly possible, so options were explored as to how to work around this. In addition, tutors found it more efficient to offer formative feedback verbally, rather than in writing. It was decided that students would publish their portfolios and each time they did any work this would be added to the portfolio so that the tutor would be able to access online. This was not an ideal solution for tutors because of the effort involved in checking the work of a large number of students (120 students). Much of the work of the project officer in this CS was in working with tutors to see how best to adapt the use of the e-portfolio to match their way of working.

The second issue to emerge was due to the decision to keep the e-portfolio version of the module exactly the same as the paper-based version. This was because the participating colleges were simultaneously running paper-based version of the module and it was seen as ensuring equality of experience. Consequently students were mainly uploading word documents and not using the in built records of the e-portfolio. This required more tutor time to review and mark work. Students were also putting all their work into their final portfolio rather than selecting the work that was most relevant. What was difficult in this issue was separating out the impact due to the e-portfolio and the impact due to the original module. It became clear that restricting the e-portfolio format to match the paper-based format had not been a good idea and that the module needed adaptation for it to work as an e-portfolio. This included the need to change the evidence requirements as well as how students recorded the evidence and the way staff monitored work and gave feedback to students.

Sixty seven students completed the portfolio and submitted it for assessment and passed. Those that did not complete the portfolio did not submit their work for assessment.

No colleges are involved in using the electronic version of the Progression module for the 2006/7 academic year. However, the experiences and evaluation are informing an evaluation of the Progression Module and the University's review and selection of an e-Portfolio tool.

### **4.3.3 Case Study 3 – Supporting Access to HE at Leeds University**

Local colleges who already had links with the Leeds University Access Academy were invited to participate in the first intake of the project in June 2005. Four local colleges in Leeds, Pontefract and Huddersfield agreed to identify students from the widening participation cohort who had expressed medicine and healthcare as a career interest. In total 49 students were provided with space in the Bodington e-portfolio tool. In January 2006 letters were sent to 12 local colleges and 6th forms inviting them to participate in the second intake of the project. Between February and May the project was launched in five colleges and 6th forms and 160 e-portfolio spaces were created.

The aim of the materials within this context was to raise awareness of the requirements for entrance to medical and healthcare courses and to provide learners contact with mentors from these courses. The activities within the e-portfolio were initially designed by the Leeds access academy manager.

Learners in intake one (2005), completed the portfolio exercises between July and September 2005 in preparation for university application in the 2005/06 UCAS cycle. They were provided with feedback from mentors (undergraduate medical students) assigned to them individually. Unfortunately technical difficulties resulted in two of the four colleges participating in intake one withdrawing at an early stage. The withdrawals were at the instigation of the tutors, rather than the students and may indicate a lack of internal buy-in at these colleges. Since we did not manage to obtain a refund of the payments we were unable to engage approach alternative colleges with a view to participating. This experience resulted in us offering staged payments to participating colleges and 6<sup>th</sup> forms in CS 1 and 2.

Between October and November 2005 the e-portfolio content was modified and extended by the project officer at Leeds University in light of feedback from intake one participants. Further feedback on this revised and new content was gathered from careers advisers, students who were part of intake one, medical school tutors, the access academy manager, the head of nursing at Leeds University and staff at the West Yorkshire NHS Deanery. Lesson plans and tutor notes were also added and integrated into the second e-portfolio and the learning outcomes were cross-referenced with the recommendations of the DfES on careers education 16-19. This revised portfolio of activities and resources was used with intake two (2006).

Challenges arose because a mentoring scheme already existed in the School of Medicine whereby targeted students were provided with access to a mentor through the Widening Access to Medical School project (WAMS). Rather than duplicate this support, students in intake one were assigned to the mentor with whom they already had established contact. Students in intake one who were not taking part in the WAMS scheme were invited to a presentation by medical students in July 2005. This presentation covered topics such as life as a medical student, the application process, how to plan for the interview and student finance.

Learners on intake two were provided with access to a pool of mentors to discuss specific questions rather than being assigned an individual mentor as on intake one, learners. To avoid duplication in intake two, students already within a mentoring relationship were informed to direct any questions to this mentor and to make available their personal statements to these mentors rather than the project officer. Feedback on exercises was provided by the project officer who was also a qualified careers adviser. Due to student numbers, we were unable to invite those students without mentors to a workshop similar to that offered to intake one; instead these presentations were made available as podcasts through the e-portfolio.

Those mentors who had students within the ELP project were notified of their mentees involvement and provided with an outline of the project aims.

The project officer and the identified member of the Bodington team carried out the training in all of the institutions. The training covered the reasons for using the e-portfolio as well as the technical aspects of using Bodington Common.

Due to the VLE changes at Leeds University which will not be finalised until September 2007 it has not been possible to continue with the Bodington logbook. The materials will be re-launched in April 2007 in the 'eduspaces' ([www.eduspaces.net](http://www.eduspaces.net)) networking tool. The tool will be made available to all 6th forms and colleges in the West Yorkshire area. Students will continue to receive feedback on entries if requested but the emphasis will change from mentoring to e-moderating, with feedback from a pool of undergraduate volunteers rather than assigned mentors.

Some of the materials are being utilised within the department and within other colleges and connexions services; requests were also received from 6th forms and colleges, Careers Scotland and from Connexions Lincolnshire and Rutland.

#### **4.4 Access to HE outputs and results**

All of the outputs and results described below are available from the project web site:  
<http://www.elp.ac.uk>.

This part of the ELP project – Access to Higher Education (Context 1) has produced three highly readable and rich descriptions of using e-Portfolios to engage students and widen participation to HE. The studies include evaluation instruments, data and analysis of findings. The case studies have contributed to a list of key questions, top tips, benefits of e-portfolios, and web links which will be of use to anyone in the education sector thinking about using e-portfolios to support widening participation.

#### **4.5 Access to HE outcomes**

The project successfully achieved its main aims and objectives to provide e-support for access to HE in all three partner institutions. We also feel we achieved the main aim of project continuation of embedding the project findings in our institutional practices, but this has been achieved in a different form. At Bradford (CS1), the new module has been adopted by the University and is included in those available through the University Compact scheme and is being delivered and supported by the University's Access and Widening Participation Team and all schools participating in ELP wish to continue. Leeds Met (CS2) is using the experiences and evaluation to inform their review of the Progression module and its future delivery. Similarly Leeds Medical School (CS3) is using the ELP experiences to inform its ongoing access activities using social software and Web 2.0 technologies.

All partners engaged more learners in their widening participation activities than originally targeted with considerable success achieved by those learners who completed the widening participation activities, as measured by their success in achieving the learning outcomes and passing the access module (Bradford and Leeds Metropolitan) or achieving an offer of a University place in an extremely competitive and oversubscribed area, ie medicine or health related subjects (Leeds access programme, see CS 3) and making informed choices about their future education choices. Please see Case Studies 1 to 3 (CS 1 to 3) <http://www.elp.ac.uk/casestudies.html> for full details.

The experiences and lessons from ELP are informing the partner institutions choice and selection of institutional e-Portfolio systems at Bradford and Leeds Metropolitan Universities.

Some of the materials discipline specific developed in CS 3 are being utilised within other colleges and connexions services; requests to use the materials were also received from 6th forms and colleges, Careers Scotland and from Connexions Lincolnshire and Rutland.

Considerable interest has been shown in the case studies and findings (eg key questions, hints and tips, benefits of e-learning) at regional, JISC programme and national dissemination events.

Finally, the ELP consortium has been successful in obtaining funding under the JISC e-Learning Capital Programme: e-Learning strand and we will be addressing the issue of regional communities of practice as part of our Enhancing Learner Progression through the Use of Personalised Learning Environments Project (ELP2 online at <http://www.elp2.ac.uk>).

## 5 Context 2 – University into workplace settings

This context explored the use of e-portfolios to support students in the transition to practice in workplace settings to support students as they move from higher education into professional practice. E-portfolio tools were piloted for students on work based placements and for those undertaking postgraduate professional qualifications.

### 5.1 HE into workplace settings aims and objectives

#### 5.1.1 HE into workplace settings aims

The main aims of the ELP project for this context were to implement e-portfolio tools:

- to support students engaging practice in workplace settings and
- to support students they move from higher education into professional practice.

An additional aim of the ELP continuation phase was to

- extend e-portfolio to pre-registration doctors undertaking their post-graduate training.

This latter aim became redundant due to changes in the national provision of post-graduate medical training and the decision to adopt a national e-portfolio.

#### 5.1.2 HE into workplace settings objectives

The objectives of the ELP project in supporting student transition from HE into workplace settings were to:

- Implement e-portfolios – personal development planning, recording of achievement, tutor, peer and self-assessment tools to support progression from higher education into work. ✓
- Provide electronic evidence of achievement that can raise aspirations. ✓
- Facilitate student progression into work by enhancing the student experience in work based placements. ✓
- Support and develop work based teaching staff by providing guidance and training on e-portfolio systems. ✓
- Establish good practice guidelines in e-support of students prior to entry and after graduation – in particular access to content and services. ✓
- Test portability and transferability of e-portfolio content through different e-portfolio systems. ✗

The project achieved the majority of the objectives for context 2 but plans for the continuation/extension period were overtaken by changes in external circumstances outwith our control.

The National Council for post-graduate medical education decided to implement a national e-portfolio throughout England and Wales. The ELP project was called on to present our findings and evaluation to the council and our experiences formed part of the evidence base used to inform their decision making.

The School of Health Studies at the University of Leeds decided to re-design their assessment approach and discontinued the use of e-portfolios in nurse education.

Finally, although the ELP project developed e-support and guidance for work-based teaching staff we were unable to convince the placement settings management or teaching staff of the value of participating early on in the project due to a variety of reasons:

- Management perceived training as unnecessary based on an erroneous assumption that staff would easily pick up how to use the e-portfolio software,

- Staff perceived the introduction of the portfolio (a national change on which ELP piggybacked the e-portfolio) as an unnecessary and burdensome change.
- Lack of time and competing pressures.

### 5.1.3 HE into workplace settings achievements

The project successfully achieved its main aim to implement e-portfolios and e-support for students in workplace settings.

The project successfully achieved its main objectives in this context, identifying key issues in relation to staff acceptance and training, managerial awareness of the issues, conversion of existing paper portfolios to online implementation and change management in general. Our evaluation results suggest that there are differences emerging in the learners' perceptions of the development of reflective skills, ownership of work and the ability to present evidence for assessment depending on whether the students are using a paper or electronic portfolio. Our findings also suggest that to be successful, e-portfolios need to have support from the users and their supervisors/mentors who provide feedback. Issues identified for future investigation include the nature of ownership, assessing reflective ability and learning, time issues, and feedback.

The outputs of this regional pilot have fed into and informed the UK debate on the choice and implementation of a national e-portfolio to support the new, common two-year vocational training programme for registered medical practitioners in England and Wales which replaced regional training programmes in 2005. The ELP project was invited to report and discuss its findings with the national bodies responsible for postgraduate medical education to help inform their choice and decision to adopt a single e-Portfolio to support the Foundation Programme across England and Wales. See case studies 4 and 5 <http://www.elp.ac.uk/> for full details.

## 5.2 HE into workplace settings methodology

As discussed in Section 3 above, the ELP project decide on a case study approach.

**Figure 7: Focus of Conext 2 - Transfer from HE into workplace settings**

Student Lifecycle Model stages	e-Support
3. Moving through the system (supporting students)	<b>e-portfolio prepares students for professional practice. E-portfolio/e-mentoring work based placement support, enhancing student experience and skills for stage 5.</b>
4. Student success/employability (achievement and preparation for work)	<b>Student takes ongoing record of achievement into professional practice. E-portfolios provide e-evidence for raising aspirations</b>

### 5.2.1 Selecting HE into workplace settings case studies

This context contains three use case scenarios (CS 4 and 5), each documenting the use of e-portfolios to support work-based training and practice. Both of these case studies were based at Leeds University Faculty of Medicine. The Bodington logbook was used to provide an e-portfolio for students studying professional healthcare qualifications, with students during their work-based placements and those doing postgraduate professional qualifications.

**Figure 8: Case studies on transferring from HE into workplace settings (Context 2)**

Case study	Partners	Audience	Module Content	Dates	No of students	e-portfolio platform
CS4	Leeds and 1 hospital	PRHOs <sup>1</sup> Post-graduate work based training	'Foundation Years Training' supported by Educational Supervisors	Aug 05 to July 06	33	Bodington Logbook

Case study	Partners	Audience	Module Content	Dates	No of students	e-portfolio platform
CS5	2 courses: post-graduate and under-graduate nursing degrees @ Leeds	Nursing students Development of professional competence	Progress file. Recording of professional competencies from placement reports. Supported by tutors and mentors on placements.	July 05 to June 06	31	Bodington Logbook

### 5.2.2 HE to workplace settings technology

The ELP project originally intended to use the Skills Profiling Web Service (SPWS) developed along with the Bodington logbook, both of which were developed as part of the JISC Distributed eLearning Tools programme. However the SPWS was not available and proved not to meet the project needs.

A particular problem in this context was access to and use of technology in health care settings, particularly hospitals. The skills and competency logs that students were required to keep, particularly by the post-graduate medical students, proved to be impractical to implement directly online since they needed to be verified by the work-place mentor. The students therefore completed the normal paper based forms which were then scanned and the electronic copy uploaded to their e-portfolios to capture achievements and enable further study and reflection.

### 5.2.3 HE to workplace settings evaluation

Within the project evaluation framework of experiences, enrichments and implementation, in the access to HE context ELP aimed to evaluate:

- whether students are better prepared for transition into workplace settings (enrichments),
- what effect e-portfolios and related activities have on achievement, retention and progress (experiences and enrichments),
- what aspects of e-portfolios aid pre-transition support and workplace experiences (experiences),
- what factors affected the engagement with and use of the e-portfolio tools (implementation),

These questions were examined in the within the HE to workplace settings use cases identified. In each case, the learner was using the e-portfolio for a different purpose or in a different way. The evaluation was carried out at pre-use, formative and summative points of the learner activities using online surveys, focus groups and semi-structured interviews. Users, non-users, their tutors and workplace mentors and other stakeholders were involved in the evaluation process. Each case study was evaluated using a similar approach and instrument.

- **Learners:** A pre-questionnaire, a mid-point questionnaire and/or focus group, a post-questionnaire and/or focus group.
- **Staff** (tutors, supervisors, work-place mentors, managers): a pre-questionnaire, a mid-point interview/focus group, a post-questionnaire and/or focus group.

The evaluation questionnaires and focus group scripts for the different use cases can be found on the project web site at <http://www.elp.ac.uk/casestudies.html>.

## 5.3 HE into workplace settings Implementation

The two case studies in this context relate to different workplace practices. Case studies four and five were located at Leeds University. The School of Medicine was already developing an online version of its progress file for undergraduate medical students through alternative funding based on existing links with the West Yorkshire Medical Deanery that was also interested in piloting an online version of

the 'Foundation Years Portfolio for PRHOs'<sup>2</sup>. This Case Study involved the learners – trainee doctors – and their workplace (hospital based) mentors and supervisors as well as staff at the Yorkshire Medical Deanery. The Leeds University School of Healthcare was also interested in launching an online progress file and took part in the project using the e-portfolio to track students' progress whilst on work placements (CS 4 and 5).

The Project Officer was responsible for the development, launch, support and evaluation of the project. In order to launch the project the technology had to be workable and supported, learning materials created or adapted, users identified and trained on the use of the system.

### **5.3.1 Case Study 4 - Workplace assessments: The PRHOs perspective**

The department utilised existing links with the West Yorkshire Deanery who were interested in piloting an online version of the 'Foundation Years Portfolio for PRHOs'. The NHS Modernising Agenda prompted the deanery to look for alternative ways of post-graduate training delivery. In conjunction with staff at a local hospital, identified by the Deanery, the pre-existing materials were transformed into an online resource. Regular meetings were held to ensure necessary changes were implemented.

The e-portfolio was launched to the 33 newly-employed doctors at an induction presentation session in August 2005 but this session did not incorporate practical use of the tool. This session was complimented with additional training in September 2005.

Due to responsibilities and time constraints none of the 33 educational supervisors responsible for overseeing the work of the PRHOs were trained on the usage of the system. Help guides and instruction for these members of staff were available both in paper versions and on the project website. They also had access to members of staff within the hospital who could guide them through the e-portfolio tool. However, this has impacted on the usefulness of the e-portfolio to trainees.

The technical challenges described above were resolved. The use of the e-portfolio has been effective in enabling some trainees to monitor their progress against the assessment rubric but is not being utilised as a reflective tool by the majority. The e-portfolio is an extension of individual learning approaches and styles.

The Foundation Portfolio is a new initiative and has not previously been used in a paper format in Hospital A. It has been introduced as an e-version. The source material was developed for use in a paper-based environment and as a result approximately 80% of the portfolio consists of reading material with only 20% being used to upload learning assessments and comments. The e-tool needs to be redeveloped and the initial material adapted to fit an e-learning style and environment.

The Deanery views the project as being successful in aiding the transition to the launch of a national e-portfolio. The shift in thinking, in varying degrees, has at least introduced the concept of electronic assessment recording to hospital staff.

### **5.3.2 Case Study 5 - Workplace assessments: The Nurses' perspective**

The Leeds University School of Healthcare was interested in launching an online progress file and agreed to take part in the project. The existing progress file materials were developed within the e-portfolio through consultation with staff members within the Leeds University School of Nursing. Regular meetings were held with the Head of Nursing who relayed feedback from staff members and from students using the tool. Changes could be made to the content of the tool on an on-going basis.

Student nurses were given a choice of using either the e-version or paper version of the progress file. Those who agreed to take part in the pilot gave written consent to their involvement. All of the participants of the pilot were provided with the project officer's contact details if further support was required.

Users, tutors and supervisors were provided with training on the use of the tool and told of the advantages this usage would generate.

The use of the e-portfolio has been effective in developing reflective skills amongst students and the majority of students view this as the main reason for use an e-portfolio tool. The feedback capabilities

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<sup>2</sup> Pre-Registration House Officers

of e-portfolio usage have been utilised and led to direct and quicker feedback being provided. However students are only using the parts of the e-portfolio that are of immediate and beneficial use to them i.e. placement reports.

The use of technology is not a barrier to the use of an e-portfolio. It is the content of the e-portfolio tool and the notion of 'Added Value' that attracts students to e-portfolio usage. However, some technical problems occurred with staff outside of the university where access to immediate support is not available.

The majority of non-users view the use of the e-portfolio tool as an 'addition' to their workload not as a tool to enable them to manage their workload more effectively. There were also concerns, from users and non-users, about the confidentiality issues of using e-portfolios to store work.

Although the benefit of sharing work with others was not the major reason for initial e-portfolio usage, the majority of students believe that this facility is the major reason for using an e-portfolio in the future.

#### **5.4 HE into workplace settings outputs and results**

All of the outputs and results described below are available from the project web site:  
<http://www.elp.ac.uk>.

This part of the ELP project – transferring from higher education to workplace settings (Context 2) has produced two highly readable and rich descriptions of using e-Portfolios to engage learners and support students in their transfer to workplace settings. The studies include evaluation instruments, data and analysis of findings. The case studies have contributed to a list of key questions, top tips, benefits of e-portfolios, and web links which will be of use to anyone in the education sector thinking about using e-portfolios to support widening participation.

#### **5.5 HE into workplace settings outcomes**

The project successfully achieved its main aims and objectives to provide e-support for transferring from HE into workplace settings.

The PRHO pilot project has been replaced with the launch of a national e-portfolio pilot for the 'Foundation Years Programme' (utilising software from the Scottish e-portfolio project). The contents of the Bodington logbook were transferred to the new software by cutting and pasting the documents into the new e-portfolio. The issues raised from the evaluation, particularly those issues around the engagement of the educational supervisors and consequential effect on the engagement of the learners has been fed back to the deanery and will help to shape the organisation of the new e-portfolio launch.

Considerable interest has been shown in the case studies and findings (eg key questions, hints and tips, benefits of e-learning) at regional, JISC programme and national dissemination events.

Please see Case Studies 1 to 3 (CS 1 to 3) <http://www.elp.ac.uk/casestudies.html> for full details.

## 6 Context 3 – Transferring between HEIs

This third context looked at a very specific widening participation initiative designed to open up opportunities into medicine and healthcare education to groups currently under-represented in higher education. Students who achieve a particular standard on a BSc Clinical Sciences have the opportunity to apply for a transfer to Leeds University medical degree programme at the end of their foundation or 1<sup>st</sup> year.

### 6.1 Transferring between HEIs aims and objectives

The main aim is to provide an e-portfolio that the students can use to record their achievements and take these with them if they transfer to Leeds.

The main objective was to test the transferability of portfolios between different e-portfolio systems – PebblePad to Bodington Logbook.

#### 6.1.1 Transferring between HEIs achievements

This case study presented the greatest challenge since we were attempting to change the embedded and established practice on an existing Personal Development Planning module which used a paper-based assessment and which was perceived as successful and effective. Participation in this case study was voluntary and consequently was low due to lack of support from the module tutor. However it has produced a rich amount of valuable data and enriched our understanding of the cultural issues involved in implementing (e-Portfolio) change.

### 6.2 Transferring between HEIs methodology

As discussed in Section 3, ELPP decided to use a case study approach. Figure 9 below summarises the ELP focus in providing support for students transferring from Bradford University to Leeds University Medical School.

**Figure 9: Focus of Context 3 - Transferring between HEIs**

Student Lifecycle Model stages	Compact e-Support
3. First steps in higher education (including induction programmes and assessment of key skills)	Student brings an ongoing record of achievement which can be extended and expanded throughout their HE career.

#### 6.2.1 Transferring between HEIs Case Studies

This context contains a single use case study looking at the transfer of students and their e-portfolios between two HEIs.

**Figure 10: Case Study on Transferring between HEIs (Context 3)**

Case study	Partners	Audience	Module content	Dates	No. of students	E-Portfolio platform
6	Bradford (and Leeds) Universities	Life Science students - WP opportunities to access medical degree	PDP	Sept 05 to June 06	18	PebblePad with potential transfer to Bodington Logbook

## 6.2.2 Transferring between HEIs technology

This case study examined the transfer of data between the PebblePad e-portfolio system and the Bodington Logbook.

## 6.2.3 Transferring between HEIs evaluation

The evaluation strategy and process was the same as for Context 1 and is documented in Section 4.2.3 above.

## 6.3 *Transferring between HEIs implementation*

### 6.3.1 Case Study 6

**Context 3: Transferring between institutions and courses** through building e-support for step 3 in the student lifecycle (supporting students moving through the system). This is a limited case study based on students who start a professional course at the Bradford University some of whom have the opportunity at the end of their first year to transfer to Leeds University Medical Degree, either by direct entry into year 2 or into year 1 depending on their progress.

This context arose out of an existing partnership between the Universities of Bradford and Leeds. Bradford University's BSc in Clinical Sciences offers widening participation routes into medicine and healthcare education to groups currently under-represented in these competitive areas. The course offers students who are not eligible for direct entry, the opportunity to transfer at the end of their first year at Bradford to the first or second year of Leeds University's medical degree.

One aim of this case study was to transfer a student e-Portfolio from the Bradford system to the Leeds system.

It was not possible, due to the late start of the project, to negotiate access to the first year students on the Bradford University BSc Clinical Sciences programme. Participants were drawn from the foundation year instead. Unfortunately this restricts the opportunities to test the interoperability of real, authentic e-Portfolios since it is less likely that students will transfer directly from the foundation year to the Leeds University medical programme. However we successfully transferred an exemplar e-portfolio between the two systems.

It was agreed that students on the clinical sciences foundation year would be given the option of using a paper based portfolio or an e-portfolio for their assessed personal and professional development module. The tutor involved in assessing the module was more in favour of a paper based version and even those students who were to complete the e-version were required to hand the work in on paper. In hindsight, it was inevitable that no student would subsequently complete all the work in the e-portfolio given that students felt it was much easier to print out and control the layout of the work in other programs such as MS Word or Powerpoint.

Initially, 19 out of 75 students expressed an interest in using the e-portfolio. Each student was offered group and individual training in using the e-portfolio although only 3 students attended training. IN the end, no student completed all their work in the e-portfolio. Feedback from e-portfolio students included that they were in a minority and they did not want to do anything to risk their assessment and so reverted to doing the portfolio in the same way as the majority of their peers.

Although we ran into several challenges in meeting the objectives in Context 3 this case study, number 6, produced extremely valuable findings on change management and personnel issue relating to e-Portfolios within and across institutions. Please see Case Study 6 at <http://www.elp.ac.uk/> for full details.

## 6.4 *Transferring between HEIs outputs and results*

There are a number of ways to achieve interoperability. The method available to us was to transfer data from one e-portfolio into another. The alternative option being investigated by the JISC e-learning framework reference model (<http://www.elframework.org/refmodels/epll/>) potentially offers an alternative, in that the data can reside in the original e-portfolio but can be drawn out by whatever system is currently in use.

IT skills of both students and staff may present a significant barrier. As an example, one student had hardly ever used a computer before. The student felt that the addition of using the e-portfolio was just too big a barrier to overcome and would not be able to volunteer.

Electronic assessment of large pieces of written work such as portfolios presents a real barrier for staff who are used to being able to flick through and annotate straight onto paper. At its most basic level, electronic assessment limits the locations where staff can do the assessment.

Resistance to change is always a barrier particularly where existing practice is successful and no big driver exists to move away from existing practice. The additional benefits of such technology would need to be clearly stated and demonstrated.

It would appear that making the e-portfolio optional, especially as part of assessed courses, will not help take up of new technology. Students are acutely aware of the importance of assessment and do not like to feel that they may be at a perceived disadvantage (real or otherwise) because the way they are preparing their work differs from what other students are doing.

## **6.5 Transferring between HEIs outcomes**

However it has produced a rich amount of valuable data and enriched our understanding of the cultural issues involved in implementing (e-Portfolio) change.

## 7 Implementation

Although the project was due to start in March 2005 it took a while to appoint the two project officers and the project didn't really get started until June. Both project officers were motivated self-starters with extensive and complementary knowledge of the areas being explored – particularly Context 1. One project officer is an ex-secondary school teacher and the other an ex-careers adviser. However the fact that both are capable of working independently and that the project use cases are self-contained meant that we had to work hard as a team to ensure that the various strands of the project all received appropriate attention that we developed a synergy that would develop and enhance our collective understanding beyond the lessons of the individual cases.

Consequently this delay coupled with the later project continuation funding meant that the project ran until 31 December 2006.

### 7.1 Technology

The project required software that was easily adapted, had stringent security protection, enabled interaction between learners and which could be hosted and supported quickly and at minimum cost. The technical work covered a number of areas:

- system integration and user authentication,
- configuration of the tools to host the portfolios (original paper, or newly developed),
- interoperability - transfer of students' portfolios from one system to another.

Issues arising from this use of technology include access and authentication, external firewalls and security, lack of technological expertise in participating external organisations, providing technical support to external institutions, usability and organisational issues regarding allowing access to partners' institutional systems to learners under the age of 18.

This work was carried out with the assistance and expertise of Bradford University IT systems staff and Leeds University School of Medicine IT staff.

The technology changed from our initial bid which specified the Bodington logbook tool and a skills profiling tool (SPWS<sup>3</sup>) at Leeds University and the ePet e-Portfolio from Newcastle University at Bradford and Leeds Metropolitan Universities. These three tools were outputs from phase I of the JISC DeL tools projects.

The final e-portfolios tools used were PebblePad from the University of Wolverhampton at Bradford and Leeds Metropolitan Universities and the Bodington Logbook at Leeds University. The table in **Error! Reference source not found.** shows which tool was used in each context and case study.

The technical work covered a number of areas:

- transfer of students portfolios from one system (PebblePAD) to another (Bodington VLE),
- system integration and user authentication – Bradford University decided to use LDAP<sup>4</sup> to authenticate participants working with Bradford University and registered on University systems access to the e-Portfolio system (PebblePAD) which was externally hosted,
- configuration of the portfolio tools to support the portfolio requirements,
- configuring participating schools' and FE colleges' security firewalls to allow students access to these web-based portfolios which turned out to be problematic and an ongoing challenge,
- legal and organisational issues in give access to external users to University systems.

<sup>3</sup> SPWS: Skills Profiling Web Service

[http://www.jisc.ac.uk/whatwedo/programmes/programme\\_edistributed/deletspws.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/deletspws.aspx)

<sup>4</sup> Lightweight Directory Access Protocol

[http://en.wikipedia.org/wiki/Lightweight\\_Directory\\_Access\\_Protocol](http://en.wikipedia.org/wiki/Lightweight_Directory_Access_Protocol) (accessed 15 Jan 2007)

### **7.1.1 Boddington Logbook at Leeds University**

The e-portfolio tool was created within the Leeds University VLE, Boddington Common and was used in Contexts 1 and 2 to support case studies 3, 4 and 5.

The project did not implement the Skills Profiling Web Service (SPWS) because the software was not sufficiently flexible and reliable and participants did not have convenient and proximate access to IT facilities in their work placements (on the wards) at the times required to access the e-Portfolio. An alternative solution was implemented using paper based recording of the paper journals with subsequent scanning and automated processing of the information. It was possible to implement the other aspects of the e-portfolios requirements for context 1, case study 3; and context 2, case studies 4 and 5 directly in the Boddington Logbook.

There were many advantages in using this system: Boddington was already hosted on the Leeds University server, there was pre-existing technical support available, the system enabled users to determine access to their e-portfolio contents and the learning materials in the system could be easily adapted.

The first task was to investigate the scope, usability and support available in the use of Boddington Common. Support from the Boddington team was secured and a member of staff within the team was identified as a key contact for the project's duration and attended project meetings to discuss technical and support issues.

The identified learners and their supporters were issued with Boddington usernames and passwords and a member of the Boddington VLE technical team was available at all initial induction sessions and supported learners in the use of the software.

A back-up system was put into place for the loss of password and username details and key members of staff in each institution were responsible for contacting the Boddington help desk if this occurred.

The technical launch of the product did meet with some problems in the initial phase of the project. Due to firewall protection in some institutions users experienced problems when accessing their individual e-portfolio space. When users in these institutions logged on to the system they were able to view the e-portfolio spaces of others as the system cache automatically generated the last e-portfolio that was accessed. There were also problems when servers in the 3<sup>rd</sup> party institutions were updated or changed without communication with the Boddington contact. In order to restore faith in the system an additional training session was held for those that had experienced these problems. When the second phase of the pilot was launched IT staff in each of the institutions were contacted to discuss this issue and measures were put in place to prevent this hindering the initial launch of the system.

The team realised that a wider community needed to be involved in the launch of the project and that this community should also involve staff responsible for IT in 3<sup>rd</sup> party institutions. These personnel should also be informed about, and included in, planning such projects from the onset. The wider project team should not only be limited to those directly supporting the learners.

### **7.1.2 PebblePad e-Portfolio at Bradford and Leeds Metropolitan Universities**

Pebblepad was used by Bradford and Leeds Metropolitan Universities in Contexts 1 and 3 to support case studies 1, 2 and 6.

Members of the project team from Leeds Metropolitan and Bradford reviewed the ePet tool against the target audience of 15 to 19 year olds (Context 1) and felt that its interface would not attract or engage them sufficiently. This view was re-enforced at a demonstration of ePet at Newcastle where the presenters indicated that feedback from their own users suggested the interface was seen as boring and not engaging. We became aware of the PebblePad e-Portfolio system from Wolverhampton and arranged a demonstration for project staff and access co-ordinators. The developers also presented evidence that the system had been successfully used with a similar age group and felt. The team felt, on balance, that PebblePad was the more engaging of the two systems and Wolverhampton agreed to host and provide a service to the project. The fact that Wolverhampton offered to host the service free of charge since they were also involved in a DeL Regional pilot project was an added incentive, compared to the £10,000 it would have cost for an ePet hosted service.

The users were supported by the Project Officer with technical support provided by PebblePad who were extremely responsive.

Since participants in the pilots were registered on the student information systems at both Universities, we investigated the possibility of linking PebblePad directly to the Universities' user authentication systems, this avoiding the need and overhead of creating user accounts manually on PebblePad. This proved to be possible at Bradford University where we could use the University's LDAP service to authenticate University of Bradford students/ widening participation learners in the externally hosted e-portfolio system (PebblePAD). However this proved to be problematic technically and organisationally, involving the project officer in considerable liaison between Bradford and PebblePad technical staff eg Bradford had to provide user certificates to enable PebblePad to use Bradford's LDAP. These certificates turned out to be incorrect in the first instance but tracking down the problem took time; the certificates also had an in-built expiry date which the project officer was unaware of, resulting in students not being able to access PebblePad for a short time at the start of the project continuation period until a new certificate was issued.

The main organisational issue was the way student accounts for school/FE students on compact schemes were implemented at Bradford. The students' details are recorded in Bradford's student administration system, they are allocated a unique University student number and their attendance at compact events and participation in accredited modules (such as the one they were studying on this project) is tracked and monitored, in the same way as normal students are tracked. Normally this means that 'students' are automatically allocated a computer user account and University email address. However local arrangements within computer services meant that these two faculties were not implemented for Compact students – when these students are attending events on campus requiring access to IT facilities they are closely monitored at all times, but this is more difficult with remote access. Two key issues are:

- Issue of legal liability/responsibility of the 'University' and the difficulty of providing a safe and secure online environment for under 18's (eg as in school) since most universities' intra/internet access is uncensored.
- Legal definition of a student and the implications for institutional licences for online systems used to support non-standard students. Licences normally restrict institutions to registered students or employees and this is particularly true of VLE providers eg Web-CT and Blackboard. There may also be a cost implication where the licence fee is based on student numbers.

Finally, these case studies also experienced ongoing problems throughout the duration of the project with students being intermittently unable to access PebblePad due to changes in school and college firewall security. This was particularly acute where the school/FE technical support was not sufficiently skilled to understand why various problems arose. The project officer although technically skilled was not a networking expert and support was not available from the Universities' IT support staff on these issues. This raises the question as to where responsibility for this support lies, how it is accessed, staffed and funded.

### **7.1.3 Technology Summary**

Issues arising from this work include access and authentication, external firewalls and security, lack of technological expertise in participating external organisations, providing technical support to external institutions, usability and organisational issues regarding allowing access to partners' institutional systems to learners under the age of 18, and the legal and cost implications of non-standard users accessing University systems.

## **7.2 Materials**

The teaching materials created from the project focus on preparing learners for university application. The e-portfolio guides the students through activities designed to enhance their awareness of specific courses and of the application process. Materials include: an introduction to critical reflection and its importance in medicine and healthcare courses; reasons for and against a university application; a personal skills audit and those required for chosen courses; an introduction to university finance and information on bursaries; deciding which courses and universities to choose; how to record work experience; how to apply, deadlines and back-up plans.

Students then choose an exercise related to their chosen course to enhance their knowledge and understanding and to consider what may be expected of them at an interview.

In Context 1, Case study 3, for example produced subject-specific exercises for medicine, nursing and midwifery, dentistry, physiotherapy, optometry and speech and language therapy. The e-portfolio is complete when students have put together their UCAS personal statement. Podcasts were also created from the project are available for download from i-tunes and can be accessed here (<http://cmurray.jellycast.com/>). These podcasts will now be updated when required by the WAMS mentors at the Leeds University and will provide a central part of their information provision. A video has also been created focusing on work experiences and this will be available through 'You Tube' shortly ([www.youtube.com](http://www.youtube.com)).

Case Study 1 produced new material specifically geared towards the use of an e-portfolio whilst Case Study 2 converted existing materials for use with an e-portfolio.

### **7.2.1 Material summary**

The case studies where new materials were produced to meet the specific needs of the learners and to take advantage of the features of the e-portfolio (CS 1, and 3) were more successful in engaging the learners than those where existing paper based materials were adapted (CS 2, 4 and 6).

## 8 Outputs and Results

All of the outputs and results described below are available from the project web site:  
<http://www.elp.ac.uk>.

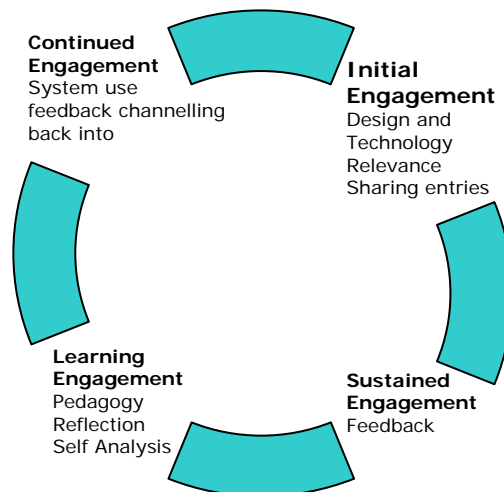
The outputs include **six** rich **case studies** that contain evaluation instruments, data and analysis of findings. The case studies have contributed to a list of **key questions, top tips, benefits of e-portfolios**, and web links which will be of use to anyone in the education sector thinking about using e-portfolios to support widening participation.

The evaluation has also produced various models for analysing and implementing e-portfolios effectively to engage students in learning and to develop their reflective skills.

There are claims that e-portfolio use promotes learner-centred development, enables the reflective process and supports lifelong and, the newer notion of, life-wide learning. The questions that challenged the ELP project was whether the users and potential users of e-portfolios feel the same?

The ELP project developed an initial model of user engagement with e-portfolios (Murray, 2006) as show in Figure 11 below which has 4 steps: initial engagement, sustained engagement, learning engagement and continued engagement.

**Figure 11: Model of e-portfolio implementation and user engagement**



This model can also be looked at as a linear process as shown in the table as shown in Figure 12 below. At each stage the learner successfully moves onto the next stage or disengages and stops using the e-portfolio

**Figure 12: Model of e-portfolio implementation and user engagement as a linear process**

Stage	Learner activity
<b>Enabling stage</b>	The purpose of the e-portfolio, the technology, institutional aspects. When these are in place...
<b>Initial learner engagement stage</b>	learner uses the e-portfolio for the first time to record some activity. If this is successful then...
<b>Learning engagement stage</b>	learner starts to reflect on experiences and plan development. Continue use of e-portfolio over time results in...
<b>Sustained learner engagement stage</b>	learner records, reflects and plans over a prolonged period of time creating numerous 'artefacts'. At some stage the learner needs to present these

<b>Stage</b>	<b>Learner activity</b>
	artefacts commensurate with the initial purpose of use.
<b>Output Stage</b>	Learner pulls together the various artefacts in a presentational portfolio for others to view.

From this initial model we attempted to ask and answer the following questions:

- What makes an individual delve in to the learning world of e-portfolios?
- Which environments and individual learner traits support engagement?
- What type of engagement is needed and are there factors which affect the 'type' of engagement experienced?

The initial model was further developed to identify different types of engagement learners had with e-portfolios and we identified five types of user engagement as shown in Figure 13 below: non-user, reader, tentative, selective and continuous.

**Figure 13: Engagement of Users by 'Type'**

<b>Type of Engagement</b>	<b>Characteristics</b>
Non-user	Don't access portfolio after initial introduction/induction
Reader	Makes no entries in the e-portfolio. May access once or on multiple occasions just to read the content.
Tentative	Makes 1 or 2 entries then stops.
Selective	Makes entries but only in sections they feel they can benefit from. May proceed to output stage
Continuous	Makes continuous entries and proceeds to output stage.

## **8.1 Conference Presentations and Papers**

As well as the learning materials and case studies created from the evaluation results the project has also contributed to the wider research on e-portfolios through conference presentations and papers.

The project team have actively engaged in dissemination opportunities at every level local, regional and national and are continuing to do so. The full list of presentations and papers are available from the project web site at <http://www.elp.ac.uk>.

As short list of some examples are included below.

- A symposium was presented at the Networked Learning Conference focusing on learner engagement across the 3 contexts (<http://www.networkedlearningconference.org.uk/abstracts/Higgison.htm>).
- This was followed up with a presentation at the SOLSTICE conference outlining the differences between e-portfolios created from pre-existing materials and those developed for the purpose of including in an e-portfolio tool (<http://www.edgehill.ac.uk/Sites/SOLSTICE/Conference2006/documents/33.pdf>).
- The model of user engagement was first presented at the EDEN conference, (<http://www.leeds.ac.uk/medicine/meu/elp/pubs/edenfinalleeds.pdf> & <http://www.leeds.ac.uk/medicine/meu/elp/pubs/EDENPresentation.pps>) this model placed the e-portfolio at the centre of engagement and was built on and subsequently transformed into to a 'learner centred' model of engagement focusing on behaviours of use through a paper published in the conference proceedings of 'E-portfolio 2006' (<http://www.leeds.ac.uk/medicine/meu/elp/pubs/Oxford1.pdf> & <http://www.eife->

[l.org/publications/eportfolio/proceedings/ep06/S2\\_murray.pdf](http://www.leeds.ac.uk/medicine/meu/elp/pubs/ep06/S2_murray.pdf)) and through a presentation at the Centre For Recording Achievement (CRA), Researching and Evaluating PDP and e-Portfolios

- Seminar.
- A short presentation and paper was published in the proceedings of the international IEEE conference focusing on the use and pedagogical impacts of using an e-portfolio tool ([http://www.leeds.ac.uk/medicine/meu/elp/pubs/ieee\\_submission\\_cmurray.pdf](http://www.leeds.ac.uk/medicine/meu/elp/pubs/ieee_submission_cmurray.pdf)).
- These academic outputs have been supplemented by articles in the CRA Newsletter (<http://www.recordingachievement.org/downloads/PDPUKJUNE06.pdf>) and an article in the careers guidance professional magazine 'Newscheck'.

## 9 Outcomes

The project successfully achieved its main aims and objectives to provide e-support for access to HE in all three partner institutions. We also feel we achieved the main aim of project continuation of embedding the project findings in our institutional practices, but this has been achieved in a different form. At Bradford (CS1), the new module has been adopted by the University and is included in those available through the University Compact scheme and is being delivered and supported by the University's Access and Widening Participation Team and all schools participating in ELP wish to continue. Leeds Met (CS2) is using the experiences and evaluation to inform their review of the Progression module and its future delivery. Similarly Leeds Medical School (CS3) is using the ELP experiences to inform its ongoing access activities using social software and Web 2.0 technologies.

All partners engaged more learners in their widening participation activities than originally targeted with considerable success achieved by those learners who completed the widening participation activities, as measured by their success in achieving the learning outcomes and passing the access module (Bradford and Leeds Metropolitan) or achieving an offer of a University place in an extremely competitive and oversubscribed area, ie medicine or health related subjects (Leeds access programme, see CS 3) and making informed choices about their future education choices. Please see Case Studies 1 to 3 (CS 1 to 3) <http://www.elp.ac.uk/casestudies.html> for full details.

The experiences and lessons from ELP are informing the partner institutions choice and selection of institutional e-Portfolio systems at Bradford and Leeds Metropolitan Universities.

Some of the materials discipline specific developed in CS 3 are being utilised within other colleges and connexions services; requests to use the materials were also received from 6th forms and colleges, Careers Scotland and from Connexions Lincolnshire and Rutland.

Considerable interest has been shown in the case studies and findings (eg key questions, hints and tips, benefits of e-learning) at regional, JISC programme and national dissemination events.

The project successfully achieved its main aims and objectives to provide e-support for transferring from HE into workplace settings.

The PRHO pilot project has been replaced with the launch of a national e-portfolio pilot for the 'Foundation Years Programme' (utilising software from the Scottish e-portfolio project). The contents of the Bodington logbook were transferred to the new software by cutting and pasting the documents into the new e-portfolio. The issues raised from the evaluation, particularly those issues around the engagement of the educational supervisors and consequential effect on the engagement of the learners has been fed back to the deanery and will help to shape the organisation of the new e-portfolio launch.

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It would appear that making the e-portfolio optional, especially as part of assessed courses, will not help take up of new technology. Students are acutely aware of the importance of assessment and do

not like to feel that they may be at a perceived disadvantage (real or otherwise) because the way they are preparing their work differs from what other students are doing.

The case studies have produced a rich amount of valuable data and enriched our understanding of the cultural issues involved in implementing (e-Portfolio) change.

Finally, the ELP consortium has been successful in obtaining funding under the JISC e-Learning Capital Programme: e-Learning strand and we will be addressing the issue of regional communities of practice as part of our Enhancing Learner Progression through the Use of Personalised Learning Environments Project (ELP2 online at <http://www.elp2.ac.uk>).

## 10 Conclusions

A key finding from the work of the project indicates that e-portfolios are only attractive to users if they have a clear purpose. In spite of an increase in the use of technology in other spheres of everyday life, usage in education needs to be grounded within the curriculum or within pastoral activities. The evaluation indicates that learners view using the e-portfolio as an *addition* to their work load and not as a tool to *facilitate* learning.

The majority of learners did not have problems using the technology and this did not impact to a significant degree on learner engagement. The findings of the project suggest that the 'feedback providers' experienced greater difficulty in using the technology. The content and purpose of the tool is more important than the technology and the feedback providers' ownership over this content central to the success of all the e-portfolio tools.

A pivotal finding from the project has focussed on the role of the 'Feedback Provider', i.e. educational supervisor, tutor, careers adviser. The evaluation results highlight the use and power of feedback in shaping the behaviour displayed by the learner and their subsequent relationship with the e-portfolio tool. This issue also highlights the importance of involving the feedback provider in the design and content of the e-portfolio materials.

An analysis of usage has shown that the users of the e-portfolio tool enjoy differing relationships. These relationships are forged by external factors such as assessment and feedback provision and by internal factors such as relevance and gender.

Users of the e-portfolios highlighted different advantages of the tool within different contexts: The 16-19 cohort and nurses rated the ability to contact others through the tool as the most important aspect of usage. Those in the workplace rated the ability to organise work and track progress as the biggest advantage.

The use of the e-portfolio has been effective in raising students' awareness of the careers available in their chosen areas, the skills they need to develop to apply for these careers, and the types of personal information required in their personal statements.

The majority of users across the 2 contexts only used parts of the e-portfolio they perceived to be of use and beneficial to them.

## 11 Implications

Issues arising from this work include access and authentication, external firewalls and security, lack of technological expertise in participating external organisations, providing technical support to external institutions, usability and organisational issues regarding allowing access to partners' institutional systems to learners under the age of 18.

Plans for the implementation of the e-portfolio to assist in the widening participation of students into HE will be considered through discussion with the Access Academy and the widening participation officer within the School of Medicine. The materials within the e-portfolio can be adapted to apply to any subject area. In light of the current raising of entrance requirements to many courses, the introduction of testing in many subject areas and the introduction of higher tuition fees, the need for specialised, up to date HE guidance in the FE and 6<sup>th</sup> Form sector is paramount if widening participation targets are to be met.

If the project is to be embedded further into the careers education curriculum guidance staff/tutors need to be trained on the use of the e-portfolio. The project officer had been supplying feedback to the participants throughout the second phase of the launch. This feedback would need to be provided by suitably trained staff aware of the demands and expectations in applying to specific career areas. This would require time for training within institutions interested in the adopting such a programme.

The drive to modernise the NHS and the training of doctors has to be developed from within the NHS.

Staff involved in the training and supervision of doctors should have control and ownership over any e-portfolio or electronic tool introduced. The e-portfolio in this context should be more than a repository of documents. Links to learning objects and teaching tools would enhance the usage of the e-portfolio. The national e-portfolio group has instigated a national e-portfolio pilot for the Foundation Years training. This tool will only meet with success if the educational supervisors are fully trained, are aware of and embrace the potential such electronic learning tools can bring.

Further work needs to be carried out on the models of engagement. The learner centred model describes the behaviour of e-portfolio usage but cannot measure whether learning has occurred on a deep, surface or strategic level. Further testing and evaluation needs to be carried to enable these links to be made. There are also differences in the behaviours displayed along gender lines. Further observation and work is required to explore this observation.

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## 13 Glossary

FilePass	
MyWorld	<a href="http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/myworld.aspx">http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/myworld.aspx</a> (accessed 15 Jan 2007)
Compact	University of Bradford ( <a href="http://www.brad.ac.uk/admin/compact/">http://www.brad.ac.uk/admin/compact/</a> );
Access Academy	University of Leeds ( <a href="http://www.leeds.ac.uk/accessacademy/index.htm">http://www.leeds.ac.uk/accessacademy/index.htm</a> );
Access Institute	Leeds Metropolitan University <a href="http://www.lmu.ac.uk/metoffice/access/strategy/index.htm">http://www.lmu.ac.uk/metoffice/access/strategy/index.htm</a> )
Bodington Logbook	Leeds University technology choice <a href="http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/deletbod3ple.aspx">http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/deletbod3ple.aspx</a>
JISC DeL Tools Programme, Phase I	JISC Distributed e-Learning (DeL) Tools Programme, Phase I <a href="http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed.aspx">http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed.aspx</a>
e-Pet	ePortfolio Extension Toolkit (e-Pet) from the University of Newcastle <a href="http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/deletepet.aspx">http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/deletepet.aspx</a>
PebblePad	e-Portfolio and PDP toolkit from Pebble Learning (University of Wolverhampton) <a href="http://www.pebblelearning.co.uk/">http://www.pebblelearning.co.uk/</a>
Progression Module	Leeds Metropolitan University – widening participation module <a href="http://prospectus.leedsmet.ac.uk/main/promo.htm?section=EntryProgression">http://prospectus.leedsmet.ac.uk/main/promo.htm?section=EntryProgression</a>
DfES Careers guidance 14 to 19	Careers Education and Guidance in England 14-19 a national Framework <a href="http://dev.cegnet.co.uk/files/CEGNET001/resources/651.pdf">http://dev.cegnet.co.uk/files/CEGNET001/resources/651.pdf</a> (Accessed 6th November 2006)
WAMS	Widening Access to Medical School project (WAMS) <a href="http://soyouwanttobeadoctor.co.uk">http://soyouwanttobeadoctor.co.uk</a>
Eduspaces	<a href="http://www.eduspaces.net">http://www.eduspaces.net</a>