

Over the last few years the prominence of and interest in e-portfolios in all sectors of education has grown, driven in part by national policy and lifelong and personalised learning initiatives. The picture has often been a complex one, with confusion over what an 'e-portfolio' is. More recently, consensus is gathering, and clarity is being brought to the discussions, as our experience with using e-portfolio tools grows.

Fundamentally, an e-portfolio is the **product** created by learners, a collection of digital artefacts articulating learning, experiences and achievements:

An e-portfolio is a purposeful aggregation of digital items – ideas, evidence, reflections, feedback etc., which 'presents' a selected audience with evidence of a person's learning and/or ability.¹

Learners create 'presentational' e-portfolios through the use of e-portfolio **tools** or **systems**, and in the process (depending on the tools or systems used) can be inherently supported to develop one or more key skills such as collecting, selecting, reflecting, sharing, collaborating, annotating and presenting (e-portfolio related **processes**). Descriptions of e-portfolio use also tend to include the concepts of learners drawing from both informal and formal learning activities to create their e-portfolios, which are personally managed and owned by the learner, and where items can be selectively shared with other parties such as peers, teachers, assessors or employers.²

JISC-funded projects have been investigating a number of issues around the use of e-portfolio tools and systems and technology supported personal development planning (PDP) in a range of contexts.

This paper provides an overview of all of the JISC-funded activities in this area to date.

JISC's work in this area

JISC projects have been working on the use of e-portfolio tools and systems to support a range of purposes, for example:

Supporting application

- Providing a selection of material for application for admission to study or job, induction, appraisal or assessment

Supporting transition

- Through presenting a richer picture of learners' achievements on application, and in better preparing for the transition to a new environment

Supporting learning, teaching and assessment

- Supporting the assessment of learning, evidencing competencies or standards for summative assessment. Supporting assessment *for* learning, encouraging learners to present their experiences, achievements and reflections, share with peers, tutors and employers, and incorporate feedback into their learning

Supporting PDP and continuing professional development (CPD)

- Providing scaffolding to support lifelong learners in reflecting on their current and completed learning, achievements and experiences, and on goals and opportunities, to guide learning (informal and formal) and professional development over time

These areas of e-portfolio usage are not exhaustive and will inevitably overlap, and are at different stages of maturity.

Application

A number of projects are investigating issues around application to university (the numbers in brackets refer to the e-portfolio projects listed later in this document):

- Direct support for local schools and colleges (16)
- Linking with 'taster' and preparatory mini courses (17)
- National UCAS entry system (6, 43, 44)

Other projects are investigating the use of e-portfolios for applying for jobs or work placements and for building CVs (9, 15, 26, 29).

Projects are exploring the use of portfolios to showcase work in a range of disciplines, including creative industries (14, 24, 26), teacher training (10) and health (16).

Transition

Projects exploring how learners can be supported through transitions have covered areas such as the use of an electronic PDP system to support students as they move from a high support environment (further education (FE) college) to a low support environment (higher education (HE) institution) (4), and supporting the development of key skills and study skills on transfer to HE (12, 16, 17, 25).

Learning, teaching and assessment

Projects in the area of supporting reflective learning, supporting formative assessment, and presenting evidence for assessment and for formal qualifications are:

- Exploring the use of mobile devices to reflect and collect evidence for assessment (20)
- Investigating tools to support learners and advisers during the Accreditation of Prior Experiential Learning (APEL) process (21, 27)

¹ Sutherland, S. and Powell, A. (2007), CETIS SIG mailing list discussions (www.jiscmail.ac.uk/archives/cetis-portfolio.html), 9th July 2007

² Beetham, H. (2005) (www.jisc.ac.uk/uploaded_documents/eportfolio_ped.doc)

e-Portfolios: an overview of JISC activities

September 2007

- Exploring the use of portfolios in traditionally reflective/evidence-based disciplines such as education (10) and healthcare (11, 16, 24, 26, 28)
- Supporting vocational and work-based learners, including the sharing of reflections with mentors and peers (16, 20, 21, 23) and supporting the processes of information, advice and guidance provision to learners (30)

PDP and CPD

Many JISC projects have been working in this important area of supporting PDP through using e-portfolio related tools and systems. This work includes:

- Reflection on previous educational experience when starting new courses (8, 9)
- Reflection on skills with respect to career or educational aspirations (8, 17, 26, 31)
- Supporting personal and career development planning (4, 5, 7, 11, 14, 18, 21, 22, 24, 31)
- Using tools and systems with a wide range of learners in different situations (8, 9), including implementation of the IMS Accessibility for Learner Information Package (ACCLIP) specification for screen display preferences to support visually impaired users (5)
- Investigating the presentation of work for professional accreditation and appraisal (9, 16, 19)

Technical development

Interoperability and data transfer

Many projects have investigated issues around the transfer of learner data between institutions to ease transition for learners. One project (2) has developed a middleware solution to enable the transfer of learner data between otherwise incompatible systems, a solution that has been developed further through other projects in a range of contexts (14, 15, 17, 32); others are using Enterprise web services to draw down learner data from a range of institutions into a learner portal (1), e-portfolio system (41), or CV (29).

Other projects have successfully piloted the transfer of standards compliant learner data between HE and FE PDP/e-portfolio systems (5, 7), between schools and colleges (13) and between the national UCAS entry system and an institution (6). However, it has emerged that the technical standards require further rationalisation in order to achieve wider take-up. The continued development of technical standards for the learner information held within an e-portfolio is being coordinated by JISC Centre for Educational Technology and Interoperability Standards (CETIS) through the Portfolio Special Interest Group (SIG).

Security

Three projects investigated the provision of Shibboleth-based authentication for e-portfolio systems (10, 12, 13).

e-Framework and e-portfolio

The JISC e-Portfolio Reference Model project (48) has scoped the e-portfolio domain (with a focus on transition) and has made a number of recommendations for working towards a lightweight service-oriented approach, an approach enabled by the JISC e-Framework. A range of projects have been working to develop web services in the e-portfolio domain within the e-Framework (11, 29, 30, 43, 44).

Guidance for institutions

A project (46) exploring the legal issues surrounding e-portfolios and lifelong learner records has produced a range of guidance on issues such as data protection and Intellectual Property Rights. Others (16, 45) have produced guidance for institutions and specific staff groups aiming to help them make informed choices about e-portfolio systems and governance (7).

Work is also progressing with the HE Academy Subject Centres (47) around subject specific approaches to e-portfolio use, Lifelong Learning Networks (11, 13, 15, 17, 26, 30, 31), professional bodies (19), employers and sector skills councils (32).

e-Portfolio projects funded by JISC

Pilot and technical implementation projects

Managed Learning Environments (MLEs) for Lifelong Learning programme (2002–2005)

www.jisc.ac.uk/elearningfocus/mle

Many projects funded under the MLEs for Lifelong Learning programme explored e-portfolio use, including 1. NIIMLE, 2. SHELL, 3. PROSPERO, 4. TransPortALL, 5. Developing Learning and Teaching Aspects of Progress File and Personal Development Profile across HE and FE and 6. Specifying an e-Portfolio: Enhanced Learner Information for Flexible Admissions and Transitions to HE.

Distributed e-Learning (2005–2007)

www.jisc.ac.uk/pilotsdetail

7. EPICS (North-East regional collaboration around e-portfolio progression pathways with illustrative case studies)

This project explored PDP practice in the North-East, implemented e-portfolios in a number of institutional contexts and trialled data transfer between e-portfolio systems. It also investigated the legal and governance issues of a regional shared e-portfolio infrastructure, and produced guidance in this area.

8. FILE-PASS (Facilitating Independent Learning Using e-Portfolio and Associated Support Systems)

This project initially investigated the use of an Open Source Portfolio Initiative-based e-portfolio tool with links to information, advice and guidance resources to reach and support isolated or independent learners across Cumbria and Lancashire. The project worked with a wide range of learner cohorts, and went on to trial a number of different tools and systems.

9. myWORLD (Wider Opportunities for Reflective Learning and Development)

This project built on and trialled the Petal e-portfolio tool with a wide range of learner cohorts, and within professional institutes. It also produced a CV-builder for Moodle.

10. ePISTLE (e-Portfolios Informing and Supporting Teaching, Learning and Evaluation)

ePISTLE implemented the use of e-portfolios (PebblePad and ePet) in two schools and three FE colleges. It produced guidance on how best to integrate an e-portfolio into the curriculum; the issues with the use of e-portfolios for transition and progression; issues of storage and access; and the factors which affect use and non-use of e-portfolios.

11. MANSLE (Manchester Self-directed Learning and e-Portfolios)

This project initially implemented an e-portfolio system for use by three health foundation courses across the North-West. The system

implemented web services offered by existing portfolio projects (Horus and ePet). The project went on to develop an e-portfolio-like tool based on a series of browser plug-ins, and trialled this with a number of cohorts to support learners' personal and professional development.

12. Kent PLPP (Personal Learning Portal Pilot)

Kent PLPP piloted a personal learning portal across multiple institutions to provide non-traditional learners with access to resources to support their transition to HE. These resources included the Petal e-portfolio tool and study skills resources.

13. RIPPLL (Regional Interoperability Project on Progression for Lifelong Learning)

This project explained how cross-sector collaboration on PDP technology can support transition and lifelong learning. A limited set of personal data has been transferred between several different systems in schools, FE and HE in the Nottingham region using the UK Lifelong Learner Profile (UKLeaP) standard.

14. PDP4Life (Personal Development Planning for Progression and Lifelong Learning)

The project developed an extended specification for a learner record that merged formal and informal records of learning, and piloted the transfer of such data using ioNodes. It also explored the perceptions of students, academics and employers on the value of PDP and lifelong learner records, with particular focus on the creative industries.

15. EELLS (East of England Lifelong Learning Support)

EELLS developed and piloted a regional e-portfolio system for lifelong learners using ioNodes technology.

16. ELP (Enhancing Learner Progression)

This project evaluated the application and potential of e-portfolios (Bodington and PebblePad) to support learners through their lifelong learning journey, particularly at key transfer points in that journey (moving from school/FE into university, moving between universities, and moving from HE into the workplace). Project outputs include case studies and guidance.

17. The Learning Matrix

The project developed a learner portal based on the ioNodes technology through which a range of short HE 'taster courses' were delivered to learners who may not have viewed HE as a natural progression for them. The learners were supported in considering the options available to them by tailored PDP activities, the outcomes of which are being recorded as part of a lifelong learner record in IMS Learner Information Package (LIP)/UKLeaP format.

Scottish Transformation Projects (2005–2007)

www.jisc.ac.uk/elearning_sfc.html

18. ISLE (Individualised Support for Learning through e-Portfolios)

The ISLE project aimed to develop and embed a shared concept of PDP and e-portfolios to enable its FE and HE partners to meet the diverse and individual needs of learners in a radically more efficient and effective manner.

Users and Innovation Programme (2007–2009)

www.jisc.ac.uk/usersinnovation

19. Flourish

Flourish is piloting an e-portfolio system (PebblePad) with staff to be used for a variety of professional purposes including career review, academic qualification, professional accreditation and personal development.

HE in FE projects (2007–2009)

www.jisc.ac.uk/heinfo

20. WOLF (Pocket PCs to Support Portfolio Development of Work-Based Learning in FE)

A project exploring the use of pocket PCs by teaching assistants to help them reflect and collect evidence for training, and the integration of the devices into two institutional virtual learning environment (VLE) systems.

21. SPaCE-FD (Supporting Personalised and Collaborative E-learning – in Foundation Degrees)

SpaCE-FD aims to explore the use of ELGG and Moodle to support Foundation Degree students in the workplace, and ways to create a recording system for APEL and PDP.

22. ComPort (A Comparative Study of e-Portfolio Implementation in WBL)

This project is exploring different approaches to e-portfolios/PDP to support learners in the workplace, using four different e-portfolio systems across four colleges for different courses.

23. Helpp (Higher Education learning portfolio for placements)

Helpp is exploring the use of ELGG and Moodle to embed reflection and support students on work placements on a Foundation Degree in Software Design and Development.

Cross-institutional use of e-learning to support lifelong learning (2006–2009)

www.jisc.ac.uk/el_xinstit

24. PDP4XL2

This project is building on the PDP4Life regional pilot, evaluating the creative industries' learner use of the ioPortal PDP system, and mapping its data structures for PDP records against institutional systems. It is also exploring health professionals' and learners' attitudes to PDP and e-portfolios and investigating data transfer.

25. ELP2 (Enhancing Learner Progression Through Personalised Learning Environments)

In contrast to the ELP project, ELP2 is piloting the use of 'social' rather than 'individual' technologies in supporting progression and widening participation activities. It will link the introduction of individual learner profiles with some of these initiatives and complete a longitudinal evaluation of ELP regional cohorts.

26. SOLVS (Supporting Ongoing Learning in Vocational Settings)

Building on Learning Matrix and other regional pilots in the North-West, this project aims to develop tools and the infrastructure to support skills audits, course choice and applications for work-based learning within three lifelong learning networks.

27. e-APEL (e-Accreditation of Prior Experiential Learning)

The project is looking to group services into a portal to support learners and advisers through the APEL process, including reflecting on skills and gathering evidence.

28. HeLM (Horus e-Learning Management)

HeLM is developing an extension of the Horus tool to support better reflection, use with assessment, teacher development, cross-institutional administration of workplace learning, and use in dentistry and pharmacy.

29. Shibboleth-based CV builder

A web service-based CV builder is being developed to extract relevant personal data from institutional systems using Shibboleth.

e-Portfolios: an overview of JISC activities

September 2007

30. JOSEPH (Joining up Organisations to Support new Engineering Pathways into Higher Education)

JOSEPH is building on the RIPPLL project to develop web services linking e-portfolios and Information, Advice and Guidance (IAG) for young people studying or considering studying engineering, especially in the context of the new 14–19 Diplomas.

31. myPlan (Personal Planning for Learning throughout Life)

Building on the L4ALL project, which developed a system to support lifelong learners in exploring learning opportunities in London, this project is addressing improved support for personalised progression planning.

32. ioNW2 (Interoperability Network NorthWest)

Building on Learning Matrix, this project looks to develop an e-administration infrastructure for tracking learners across institutions within a credit framework to support the three lifelong learning networks in the North-West. It is also working on representing information about skills for work-based learners and employers.

Technical tools and demonstrators

e-Learning Tools projects (2004–2007)

www.jisc.ac.uk/programme_edistributed

Over the past three years a number of open source tools have been developed which were made freely available to the academic community. Tools relating to the e-portfolio domain included 33. Web Services for Reflective Learning, 34. VMAP, 35. SPWS, 36. PETAL, 37. Horus, 38. Interactive Logbook, 39. SHELL-FISH, and 40. ePet.

Toolkits and Demonstrator projects (2006–2007)

www.jisc.ac.uk/whatwedo/programmes/elearning_framework/toolkit

41. LIPID

LIPID successfully used the Sweet.net toolkit to export learner data (including name, address, current courses, module grades, etc.) from the University of Wolverhampton's student record system (SITS) into their e-portfolio system (PebblePad).

42. FROCKLE

This project provides the facility for learners to create their own user-owned personal spaces within the Bodington VLE, and finds and links to the personal spaces of others.

Admissions demonstrators (2007–2009)

www.jisc.ac.uk/admissions

43. PortisHEad (ePortfolios in successful HE admissions)

PortisHEad is investigating and trialling the use of e-portfolios in admissions, including students from local feeder colleges using e-portfolios 'for real' in their applications to the University of Wolverhampton.

44. DELIA (Delivering Enhanced Learner Information for Admissions)

DELIA is exploring how institutions can use enhanced learner information beyond that provided by the current UCAS Apply system in making decisions about offering places to applicants. This includes exploring how course entry profiles can be refined to support the practice of linking them to structured personal statements and rich e-portfolio evidence.

Studies and Guidance

45. MLEs for Lifelong Learning Support Project

www.jisc.ac.uk/elearningfocus/mle/pdp

This project, led by the Centre for Recording Achievement (CRA), developed a number of reports and outputs including guidance for HE institutions to help them make informed choices about e-portfolio systems.

46. Legal Study

www.jisc.ac.uk/learnerrecords

This project produced early and effective legal research and guidance to JISC e-portfolio and lifelong learning record (LLR) pilot projects, and those engaged in drafting learner information standards and specifications.

47. Higher Education Academy Subject Centre projects

A number of the Higher Education Academy Subject Centres have been engaging with e-portfolio issues relating to their specific subject areas. See, for example, the Education Subject Centre project (<http://escalate.ac.uk/projects/jisc>).

Models

Domain map (reference model) project

48. eP4LL

www.jisc.ac.uk/whatwedo/programmes/elearning_framework/elfref_notts

This project has mapped aspects of the e-portfolio domain (with a focus on transition) to the e-Framework.

Further information and resources

For further detail on the policy context and what this means for institutions, see the JISC e-Portfolios Briefing Paper 2006 which summarised the lessons from the MLEs for Lifelong Learning Programme around e-portfolios:
www.jisc.ac.uk/uploaded_documents/JISC-BP-ePortfolio-v1-final.pdf

For further information on all the work of the JISC e-Learning Programme, see:
www.jisc.ac.uk/programme_elearning

For a briefing paper outlining the lessons from some of the projects listed in this document, see:
www.jisc.ac.uk/media/documents/programmes/elearning/e-learningapril07.doc

For further information on effective practice with e-assessment and the role of e-portfolios to support assessment, please see:
www.jisc.ac.uk/publications/publications/pub_eassesspracticeguide

For further information on the JISC e-Framework, see:
www.e-framework.org

For information on the JISC-CETIS Portfolio SIG and their work on e-portfolio standards, see:
<http://wiki.cetis.ac.uk/Portfolio>

This briefing paper was produced by Lisa Gray (l.gray@jisc.ac.uk) of the JISC Executive.