e-Portfolios

Our infoKit covers the main drivers, purposes, processes, perspectives and issues around e-portfolios, as well as showcasing the wide range of project activity undertaken by JISC and others over the last few years, and signposting projects and research currently underway.

JISC infoNet

Contents

What are e-Portfolios?

If portfolios are 'simply a collection of documents relating to a learner's progress, development and achievements' (Beetham 2005) then e-portfolios could be defined as simply digital collections of these documents. However, ideas of what an e-portfolio 'is' are complex and to an extent the definition and purpose will vary depending on the perspective from which a particular person is approaching the concept. Consensus is beginning to grow as experience of e-portfolios develops which will help converge these different ideas and definitions.

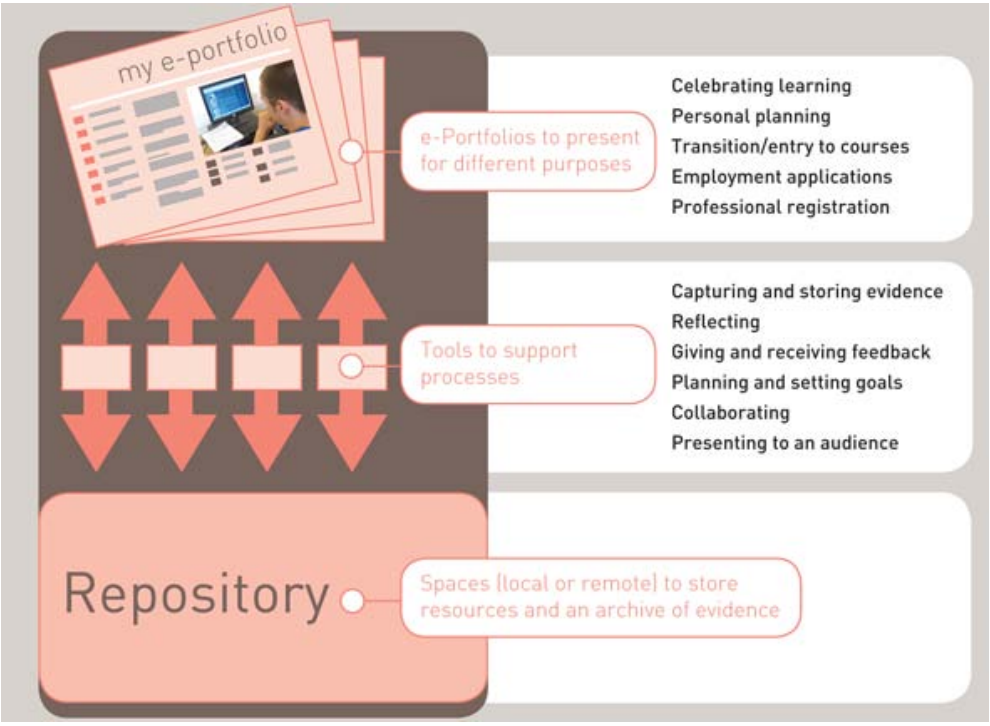
> "An e-portfolio is a purposeful aggregation of digital items - ideas, evidence, reflections, feedback etc, which 'presents' a selected audience with evidence of a person's learning and/or ability."
>
> Sutherland and Powell (2007)

A helpful starting point is to distinguish between e-portfolios as products, e-portfolios as tools or systems and the processes associated with e-portfolio development although they are intrinsically linked and in the case of product and process, interdependent.

Essentially then, an e-portfolio is a product created by learners, a collection of digital artefacts articulating learning (both formal and informal), experiences and achievements. Learners create 'presentational' e-portfolios by using e-portfolio tools or systems. As part of this production process, learners can be inherently supported to develop one or more key skills such as collecting, selecting, reflecting, sharing, collaborating, annotating and presenting - these can be described as e-portfolio-related processes. Definitions of an e-portfolio 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 and employers.

The diagram below is adapted from a 2007 Becta report 'Impact of e-portfolios on learning', (Hartnell-Young et al 2007) and illustrates the essential links between e-portfolio presentations and processes, as well as introducing the concept of learners creating different e-portfolios for different purposes.

Understanding how e-portfolios work



Common Misconceptions and Preconceptions

There are many misconceptions/preconceptions around e-portfolios; these have been 'discovered' by many of the projects that feature in the case studies in this infoKit. In the following sections of the infoKit you will find advice and guidance that you can use when dispelling some of these myths.

It is useful to visit some of these before getting into detail so here are a few:

- one e-portfolios system works in all situations (this depends on system and context of use)
- an e-portfolio can simply replace a paper-based system
- users will work out how to use an e-portfolio system to suit their needs
- There needs to be one e-portfolio for life
- Tutors/ mentors know how to support their students
- e-portfolios will save everyone time
- students are digital natives and so will easily adapt to using an e-portfolio
- students are digital natives so using blogs for sharing reflections will be unproblematic
- After students are inducted to e-portfolio processes, i.e. those involved in PDP, they will apply this across their courses
- The curriculum/pedagogy remains unaffected by the introduction of an e-portfolio
- e-portfolio implementation can be left to study skills specialists
- a successful project implementation will readily transfer to establish practice cross an institution
- HR departments/employers will value an e-portfolio in the application process
- college and university admissions welcome e-portfolios
- course information can easily be integrated into an information and guidance system to support career planning
- users understand processes like feedback, reflective writing, selecting information, planning etc.
- bespoke technologies, i.e. PDAs digital cameras, are best for information capture in the workplace
- information capture in the workplace is unproblematic
- access to an e-portfolio is unproblematic
- there is one definition of an e-portfolio (How can there be when it can be viewed as a system, a product, a set of processes, suited to a range of purposes?).

Emerging Lessons

> **'e-portfolios are as diverse and unique as the individuals that populate them...'**
>
> ePistle Final Report

These are some of the lessons emerging from e-portfolio use. More detail and related projects can be found in the relevant sections of this infoKit.

Think about requirements	Both technical and pedagogic and involve all stakeholders
Think about the context	Successful use depends on a careful analysis of the teaching and learning context. A clear understanding is needed of the processes involved and a realistic perspective gained about the ways these processes can be worked through in this particular context
Embed into the curriculum	A clear understanding is needed of the processes involved and a realistic perspective gained about the ways these processes can be worked through in this particular context. Learning activities have to be carefully thought through and the learning process identified, with support provided to learners and staff
Win hearts and minds	Think about the benefits to all groups. It is worth bearing in mind that the voice of a learner can be a more powerful persuader than being informed by a lecturer. Students need to feel they 'get' something for their investment. Mature learners are often more receptive to the potential benefits
Staff engagement is key to learner engagement	Staff engagement is key - role, support and attitude of learner support staff is critical. Staff who use an e-portfolio for their PDP have a higher learner engagement
Timing of implementation	Staff need time to think about how to best use the tools before learners are introduced to it
Personalisation is key	Learners need to feel that they own their e-portfolio before fully engaging
Reflection is hard	Providing some structure helps but it can be difficult to engage learners in planning and reflection; some respond well to using blogs and social software as well/instead
Listen to the learner and staff voices	Bear in mind the learner voice is often a more powerful vehicle than being informed by a lecturer
Training	This is not just technical, not about how to use a tool, but getting learners to work through a teaching or learning activity
Longevity	Learners won't be motivated to use their e-portfolios unless they know they have continued access. Consider alumni access and downloading onto a memory stick or transfer to a professional body system

Preparing for Success

When you are considering implementing e-portfolios, it is worth bearing in mind some threshold concepts. These are still developing for e-portfolios, but the practice and experience that is emerging has resulted in some threshold concepts for e-portfolios being defined. It is a complex area as understanding e-portfolios and their effective use comes from many different perspectives e.g. pedagogic, technical, organisational, lifelong and lifewide. Also the stakeholder list is varied with people from different backgrounds and professional interests.

The advantage of considering the threshold concepts together is that they can be truly 'transformative' from an institutional perspective. The following table covers threshold concepts that relate to e-portfolios with some guidance on supporting them.

Threshold concepts relating to e-portfolio practice - Underlying theory and further Resources»

Threshold Concept	**Guidance**
Purpose The purpose/s for the e-portfolio must be aligned to the particular context. Some contexts suit some purposes more than others and this needs to be determined by an analysis of the benefits (and costs) of the purpose in that particular context.	JISC projects reveal the following tangible benefits in relation to efficiency, enhancement and transformation. For efficiency - time savings in: • information retrieval • supporting reflection and feedback • supporting presentation • assessment • administration For enhancement • improving quality of evidence • reflection and feedback • skills development • student motivation and satisfaction to inform Teaching Quality Enhancement • increases in recruitment and retention • use by staff for professional development increasing and informing use with students supporting women returners to the workplace For transformation - through: • engaging practitioners and policy makers " institutional integration of e-portfolio use in a number of professional development activities • providing a work placement quality management system
Learning Activity Design There must be a conscious	There is a need to provide scaffolding for users in relation to the activities they will engage with, these are likely to be specific curriculum based learning activities (but will also be more generic and involve process

design and support of a learning activity/activities suited to the purpose and the context.	that users will need support with).
Processes The processes involved in the creation of the e-portfolio in this context must be understood and both technical and pedagogic support needs to be provided.	Ways of supporting the processes • Assumptions about what skills are involved in using the e-portfolio (technical and pedagogic) may not be understood - there is a need to pilot the support provided with a few users (students/tutors etc.) initially in real contexts • Assumptions about learner and tutor competence in e-portfolio process are likely to be unfounded. Users will need induction and ongoing support with processes such as action planning, SWOT analysis, reflection, giving and responding to feedback, selection and formatting of presentation for a particular audience
Ownership e-Portfolio processes and outcomes need to be OWNED by the learner - this leads to considering portability and choice of tool (they can use their own phone camera, audio recorder, Web 2.0 application etc.)	Ways of supporting ownership • Even though you know the benefits of e-portfolios in the context you will be using them, the learners may see it as more work that may not count towards a mark i.e. something to be got through. Sharing the experiences of other students talking about the benefits and sharing professional examples of e-portfolios should help to sell the idea to learners • Ensuring a 'quick win' for the learners in using their e-portfolio - i.e. sharing something that is discussed in class the following week, providing timely feedback, supporting project planning through peer support etc • Encourage creative multimedia e-portfolios that link to Web2.0 services. Provide an example of use of a range of digital capture devices mpeg, mp3, images to encourage the learners to use their own technologies to illuminate their portfolio work - encourage links to Flickr, YouTube, SlideShare etc. so that they can use the technologies they wish not just institutional ones • Provide examples of effective reflective writing compared to descriptive writing in the context you are applying this - not just generic advice. This personal aspect can make the e-portfolio compulsive, but it's a difficult skill
Disruptive Nature e-Portfolios are disruptive from a pedagogic, technological and an organisation perspective because they tend not to fit exactly within existing systems. This has implications at an institutional level - they can be seen as disruptive as they have implications for the nature of the curriculum and its assessment as well as on workload re pedagogic and technical support particularly in novel work-based learning and lifewide contexts.	Ways of managing the disruptive nature of e-portfolios • Begin within settings where there are known benefits/issues and with those involved directly in the curriculum who need to handle this • Work within settings that require and are seeking some curriculum change so that the e-portfolio activities integrate well within the curriculum. There is a need to target energies/resources in implementation. Seek out the 'open doors' • Consider implementation within professional development programmes for new lecturers but only in contexts where this provision is valued. This will mean academics will be familiar with the e-portfolio system and can often lead to academics wanting to continue to use e-portfolios themselves as well as with their students • Systematically share effective e-portfolio practice within your institution and the threshold concepts and misconceptions/ preconceptions online - involve the professional development unit or similar • Collaborate to develop pedagogic support materials for students/tutors in the processes you expect them to engage with and make them accessible, ideally online

Policy Drivers and Trends

As we move into an educational arena where learners are more diverse than ever, bringing new requirements and expectations to the table, various facets are being encouraged and incentivised by external agencies, even legislated for.

> BIS identifies a series of reforms that will 'equip learners with high-quality skills for productive, sustainable employment and personal fulfilment; and they will ensure that employers have the right skills for their business to succeed in a competitive global economy.'
>
> FE Reform White Paper: Raising Skills, Improving Life Chances

Widening participation has been high on national agendas since the late 1990s and is still an important aspect of many institutional strategies. JISC projects have demonstrated that using e-portfolios can assist non-traditional applicants in identifying their aspirations by goal-setting, planning and recording evidence of their attainments.

Lifelong learning underpins DIUS initiatives. Nowadays, the majority of people change careers several times during their working lives and take up new interests post-retirement. e-Portfolios have the potential to enable a lifetime portfolio to be built with formal records, evidence of achievement and personal development planning following the lifelong learner through school, college, university, work, continuing professional development...

Employability can be a strong driver for learners to engage with e-portfolios as they are able to personalise the view that they present to different perspective employers. Employers frequently do not have the time to read through large amounts of text and use of appropriate media to highlight relevant skills and experience can give an applicant the 'edge'. Employability is central to DIUS policies and initiatives and was an Enhancement Theme of the QAA.

Internationalisation links closely with employability. By incorporating the European Diploma Supplement into e-portfolios and applying the European Credit Transfer System, learners can take the opportunities presented for increased mobility and improved employability.

Achievement and Attainment can be demonstrated and improved (due to the emphasis on reflection) by implementing e-portfolios. Making the outcomes and results of learning more explicit and the basis of academic standards clearer has been on the agenda of the QAA since the late 1990s.

Retention of students is an issue for most colleges and universities and many have implemented systems for early identification and support of students at risk. Although a body of tangible evidence is not yet available, early signs are that e-portfolios can assist learners by supporting individual goal setting coupled with reflection. Sharing ideas, thoughts and concerns with peers through e-portfolios helps learners on feel less isolated and gives them a sense of still belonging to a like-minded group.

Personalisation means that learners can take responsibility for, and are able to manage, their learning and develop the habits of effective learning. The DCSF Teaching and Learning 2020 Review recognises that personalisation is an important aspect to the future of education in the UK and that using e-portfolios in the curriculum can support their aim of personalisation for inclusion.

Widening Participation

Widening access and improving participation in post-compulsory education is high on the agenda of both the UK government and education funding councils, encouraged by the recommendations from the 1997 Dearing Report (National Committee of Inquiry into Higher Education) and subsequent policy developments such as the 14-19 reform agenda.

Raising educational attainment, raising aspirations, encouraging application to HE and fair access to HE are seen as key elements to improving participation.

The HEFCE Student Lifecycle Model (2001) suggests key transition points in the learner's journey which are essential to the success of widening participation, from raising aspirations, through better preparation, to first steps in HE, to moving through, onto student success. Outcomes of various JISC projects suggest that the development of an e-portfolio culture will support planning, goal-setting learning and professional development and enable the recording and evidencing of attainment for presentation either for transition within the education sector (for example from FE to HE) or to employment or further training.

> The purpose of the 14-19 reforms is to "create opportunities for all young people to continue learning until at least the age of 18 and to give them the knowledge and skills for further learning and employment. This is important because a major weakness of the 14-19 phase of education is low participation post-16, which has a clear implication for the numbers of young people with the qualifications and aspiration to progress to HE."
>
> (HEFCE 2007)

The Learning Matrix

Through a 'Higher Education Taster' service, the Learning Matrix project aimed to provide 'non-traditional' learners with a better understanding of educational progression options and practical experience of learning at levels beyond their current level. This was tested by offering a cohort of learners a choice of learning packages at six FE and HE institutions in the Cheshire and Merseyside region. All learners undertook PDP activities and enrolled on courses using an online learner portal. Although e-portfolio facilities were not fully embedded in the project, it provided a model to build on for regional lifelong learning initiatives and improving progression to further and higher education which is currently being explored in the Interoperability Network North West (ioNW2) project. *(Learning Matrix Case Study)*

- **Learning Matrix project website**
- **ioNW2 Project website**
- **Further Case Studies on projects addressing Widening Participation**

The 2004 DfES Review of Fair Admissions to HE included a definition of 'fair admissions', drawing upon e-portfolios for richer applicant information to aid widening participation and ease transition. UCAS is now committed to moving towards entirely web-based admissions and review processes, offering enormous benefits in terms of speed, data accuracy and future developments in response to changing demands. In partnership with UCAS, JISC is supporting a number of projects to explore how technology can be used to support improved admissions practices such as DELIA and PortisHEad. This includes the piloting of applicants' use of e-portfolios to support the preparation and submission of their application, and the use of structured entry profiles.

Resources

- DELIA
- PortisHEad

Lifelong Learning

Over a number of years the idea of enabling learners to move from one educational context to another at different times throughout their careers has grown. The 2005 DFES *E-strategy, Harnessing Technology: Transforming learning and children's services* proposes that there should be a personal online space for every learner which will contribute to an electronic portfolio to build a record of achievement throughout lifelong learning:

'As a learner progresses through life (school, college, university, work), their records of admission, transcripts, evidence of achievement and personal development plans are often deleted or archived with no support once they leave the institution. The result is a huge waste of time and effort with the learner repeatedly collating and resubmitting the same information to subsequent institutions. These certificates, records of achievement, work examples etc are typically stored in a shoebox on top of the wardrobe until the next time they're needed.'

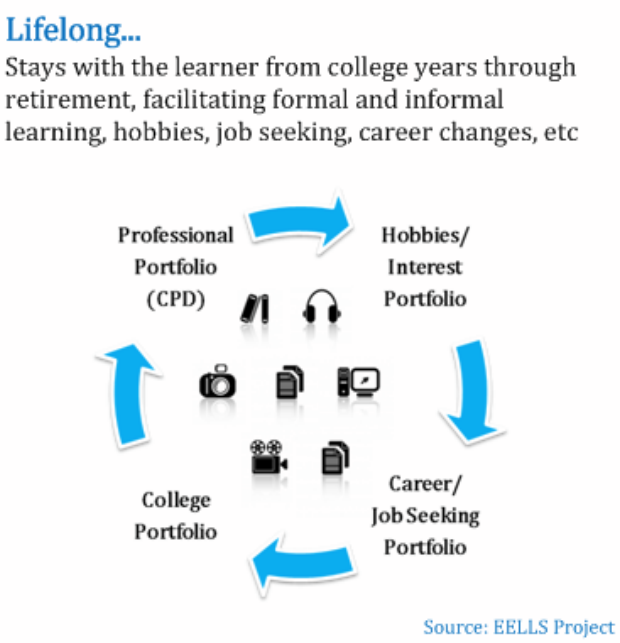
A number of JISC-funded projects have explored how e-portfolios can encourage and support lifelong learning, among them the EELLS and FILE-PASS projects.

East of England Lifelong Learning Support | EELLS

The EELLS project developed an e-portfolio which was independent of any institution but one that would provide a portal based e-portfolio service for lifelong learners in the East of England. The vision was to invite all lifelong learners within the region to capitalise on their learning before, during, and after formal education, regardless of provider of the educational experience. This e-portfolio system is now available to learners throughout the East of England at MOVE, the Lifelong Learning Network for the East of England.

Resources

- EELLS Case Study
- EELLS Project website
- MOVE website



Source: EELLS Project

Facilitating Independent Learning using E-Portfolio and Associated Support Systems | FILE-PASS

The FILE-PASS project sought to use the e-portfolio to help 'isolated' learners engage with lifelong learning and to gain access to the opportunities provided by HEIs for personal and work-related development. Although learners did use the e-portfolio, to help them engage in the reflective process one-to-one or close tutorial support was required. The project concluded that 'with appropriate support, it does appear that for a worthwhile proportion of learners an e-portfolio helps them to recognise, record and plan their own achievements.'

- FILE-PASS Case Study
- FILE-PASS Project website

Employability and Skills

One of the key education challenges for the UK is to develop a more highly skilled workforce which can compete in an increasingly competitive global market (Leitch Review 2006). Developments such as 14-19 diplomas and foundation degrees and the push to expand apprenticeships are examples of the drive to meet the needs of employers more effectively and engage them more fully in the development of the curriculum and work-based learning initiatives.

The Qualifications and Curriculum Development Agency (QCDA) has long-since supported the development of key skills relevant to the workplace and have built on this by developing a broad framework for personal, learning and thinking skills PLTS) which are an essential component of the 14-19 Diploma. These aim to develop characteristics such as 'independent enquirers', 'creative thinkers' and 'reflective learners'. Communication, teamwork and planning/organisational skills were highly rated by graduate employers in research conducted in 2008 by the Council for Industry and Higher Education (CIHE). The importance of students setting objectives and reflecting on experience in work-based contexts such as placements was also highlighted. Self-awareness and language for effective self-presentation (Moon 2004) and being self-directed (Elias and Purcell 2004) are other key requirements voiced by employers.

Learners can develop these attributes in the process of developing an e-portfolio by reviewing and reflecting on their achievements and how they relate to what an employer requires. They can then communicate their attributes and experience to employers in a format and a language that employers will understand and respond to. e-Portfolios are a way of demonstrating evidence of 'softer skills' to employers, such as teamwork and communication skills (Stefani et al 2007). In the ISLE project, employability was seen as one of the most important roles of an e-portfolio and a very strong incentive for learners to engage with the e-portfolio. The use of e-portfolios for presentation for employment was explored at Plumpton College as

> "The attitudes, personal attributes, knowledge and skills that underpin this broader capability for employment in the 21st century are additional to the specific capabilities for a particular occupation, whether doctor, electrician, accountant or florist." (UKCES)

Relevant Projects

- EPICS Case Study
- EPICS-2 Case Study
- HELPP Case Study
- ISLE Case Study
- myWORLD Case Study

A number of ongoing projects are also addressing **employability and skills**:

- Full project list [MS Excel]

Further Resources

- Leitch Review of Skills
- HEFCE's Employer Engagement Strategy
- CIHE Graduate Employability: What do employers think and want? [PDF: 1.52Mb]
- QCDA Guide to Employability [PDF: 490Kb]
- QCDA PLTs framework
- John Pallister's Blog entry on PLTs
- Use of e-portfolios to support nursing and midwifery

part of the JISC-funded myWORLD project. Some learners felt that that having an e-portfolio gave them an edge when it came to applying for jobs, especially jobs abroad, and that developing CVs using their e-portfolio was a useful process.

The level of engagement of employers with e-portfolios and their full potential to support employability is not yet fully understood. Building on the findings of previous projects, a number of recent JISC initiatives focused on the development of e-portfolios for work-based learning, for instance, the Helpp project aimed to facilitate student and employer engagement with the reflective and developmental processes of foundation degree work placements through e-portfolios in order to enhance the placement experience for both stakeholders. EPICS-2, building on the work of the EPICS project, developed an existing regional approach to e-portfolio development in the North-East, reviewing e-portfolio technologies to support work-based learning and meet the needs of employers more effectively.

There are also many projects looking at the use of e-portfolios to support professional practice and development, such as the pilots underway in the Higher Education Academy's UK Centre for Legal Education.

Internationalisation

e-Portfolios have the potential to act as a mechanism for meeting some of the Bologna objectives and assisting with the wider strategic aim of internationalisation. The Bologna Process aims to create a European Higher Education Area (EHEA) by 2010 and the European Diploma Supplement (EDS) as well as the European Credit Transfer System (ECTS) are among the tools which aim to achieve greater transparency and comparability of qualifications, enable greater mobility and improve employability and lifelong learning.

Further Resources

- EPICS
- Europass
- HEFCE International Strategy
- EIfEL
- RS3G
- Coventry University CEPAD
- JISC infoNet Bologna infoKit

Supporting schemes such as **Europass** have been developed to support mobility and recognition through five online, portfolio-style documents including the EDS which are freely available to learners across Europe. Work is being done at an international level to develop technical standards and improve interoperability to make initiatives such as Europass more effective, for instance through the RS3G group. The EPICS project undertook work with the Europass CV standard and was able to transfer XML data to and from the ePET system.

Internationalisation within curriculum design also increases mobility by enabling learners to gain an understanding of their subject within an international context. An example of this use of e-portfolios can be found in the work of the Centre of Excellence for Product and Automotive Design (CEPAD) CETL at Coventry University, capitalising on their international profile in automotive design. Through the use of computer technologies they have enabled design students to develop spatial intelligence within a culturally diverse and international context. The e-portfolios will be their passports to the community of practice of transport and product design. An international partnership provides professional engagement in project work and portfolio development and this is underpinned by pedagogic research into design.

Bologna Process Action Lines

Adoption of a system of easily readable and comparable degrees

Adoption of a system essentially based on two cycles

Establishment of a system of credits

Promotion of mobility

Promotion of European co-operation in quality assurance

Promotion of the European dimension in higher education

Focus on lifelong learning

Inclusion of higher education institutions and students

Promotion of the attractiveness of the European Higher Education Area

Doctoral studies and the synergy between the European Higher Education Area and the European Research Area

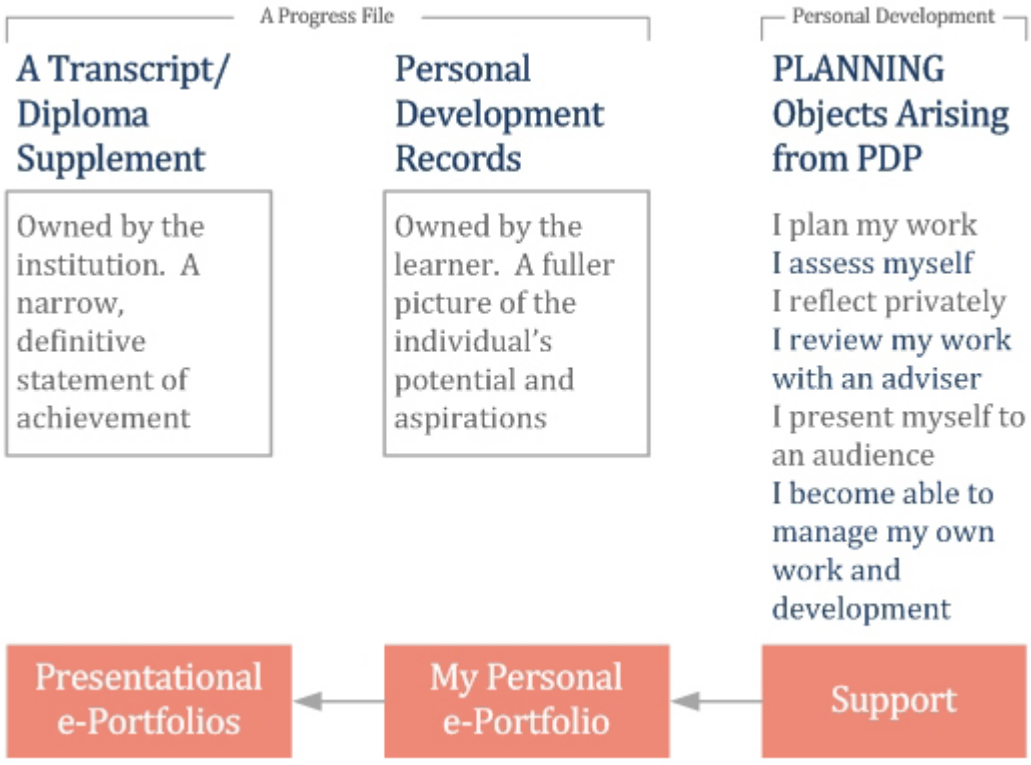
Achievement & Attainment

A number of key initiatives are driving forward a change in the way in which learner achievement is collected, recorded and presented to better enable lifelong learning, increase employability and improve transparency and recognition of qualifications.

> Europass provides a portfolio of standardised electronic documents for learners across Europe to use to record their achievements, skills and competencies including work-based experience which can be easily understood across Europe.

The Managing Information Across Partners (MIAP) Learner Registration Service (LRS), launched in February 2008, will be capable of issuing a Unique Learner Number (ULN) to every person aged 14 and over in education and training in the UK, and will allow them to build a lifelong record of their participation and achievements. The Learner Record is an aggregation of records about an individual's learning that has already been collected by UK education bodies with an initial focus on qualifications. Although learners will not be able to change their record, they control who can access all or selected elements of it.

Although the use of HE Progress Files has become widely adopted in the English HE sector, the Burgess Report recommends a single, more comprehensive record of learners' educational achievements which will better support the skills agenda and flexible and lifelong learning. The Higher Education Achievement Record (HEAR) will give employers more detailed information on the skills, progress and attainment of prospective employees and will provide the opportunity to record workplace learning and higher level skills developed as part of higher education programmes. Although the Progress File model is likely to evolve under the Burgess proposals, the diagram below shows how e-portfolios could support both reflective learning through Personal Development Planning (PDP) and associated evidence captured in the Progress File.



Adapted from a presentation by Peter Rees-Jones to a joint meeting of the CETIS Pedagogy Forum, June 2004.

Both the 2005 DfES E-strategy (Harnessing Technology: Transforming learning and children's services) and the HEFCE Strategy for e-Learning (2005) propose the use of an electronic portfolio (or at least electronic media) to building a lifelong record of achievement skills and achievement. These initiatives and drivers provide significant administrative, technical and legal challenges at institutional and national level in terms of e.g. data management, interoperability, data transfer, authentication and data ownership.

In response to these challenges, JISC projects have focused on the technical frameworks which will enable data transfer and interoperability at critical learner transition points (e.g. school to HE, FE to employment etc) and the potential of e-portfolios to support these processes. The e-Portfolio Lifelong Learning Reference Model project tested a range of scenarios and developed a 'thin' e-portfolio model of services and workflow to reduce the complexity of data transfer between different data repositories. This is being taken forward in specific contexts such as admissions to HE (DELIA project) and at regional level (RIPPLL).

Further Links and Resources

- MIAP
- Burgess Report [PDF: 338Kb]
- Centre for Recording Achievement
- eP4LL

Case Studies

- DELIA
- RIPPLL

Retention

The widening participation agenda brings with it an added impetus to improve student retention rates. Retention is also a powerful institutional driver in its own right. Although the UK has a higher record of HE student retention than most other OECD countries, across the sector around 22% of students failed to complete their studies in 2006, although there is considerable variation in retention rates between individual institutions. Student retention is considered at a strategic level at most (if not all) UK HE institutions in relation to widening participation, learning, teaching and assessment, and staff development. The provision of proactive student support, with e-portfolios providing a mechanism to encourage collaboration, communication and feedback can play a role in improving student retention rates.

In the Individualised Support for Learning through E-portfolios (ISLE) project, a tentative link was made between e-portfolio use and improving student retention. By breaking down their learning processes through reflection, it was felt that learners were able to set achievable goals for themselves - this meant that learners were less likely to give up early in the programme. However tutors that mentioned this change were at a very early stage in the implementation of e-portfolio.

Resources relating to Retention

- Select Committee Report
- Case Studies
- Sheffield Hallam University video clips

The SOLVS project found that *'The ability for a potential learner to self-assess their suitability for a particular course before applying is particularly powerful in terms of student retention - having undertaken this process a student should be less likely to withdraw at an early stage due to the course being unsuitable*'.

At Sheffield Hallam University, learners are being introduced to an e-portfolio and ePDP in a first-year skills module. Tutors have been concerned that learners are becoming less involved with the institution especially at transition points such as the first few weeks of study. The e-portfolio is seen as a learning space where learners can feel at home and through which they can become more independent and self-reliant. Through a series of video clips, Serena

Bufton from Sheffield Hallam discusses this implementation of the e-portfolio and its aims to encourage learners to become more involved and connected with the institution.

The Tangible Benefits of e-Learning project sought out evidence that technology-enhanced learning is delivering benefit for learners, teachers and institutions. One of the case studies from the University of Wolverhampton clearly identified the potential of e-portfolio use in improving retention:

Gayle is a student nurse in the second year of her Diploma in Nursing programme. When she commenced on the programme she lacked confidence in herself and was not in the habit of utilising e-learning. She did not own a computer. This is her comment on how she found using the e-portfolio system originally.

'I admit that when we were first introduced to PebblePad I hated it. I could not see how it would benefit us or help us to gel as a community (and I am a technophobe). However to be perfectly blunt, I would have been well and truly lost without PebblePad whilst out on placement. It is easy to think you will cope, you are self aware and confident whilst you are in the safe surroundings of the university's four walls. However when you are actually out on placement it is nothing like you expect (speaking for myself of course). You encounter experiences and see things you never dreamed of and whilst we are privileged in one respect, it can also be a frustrating and isolated time. We were in university for four months, we saw each other for five days a week and we became a close knit community. I don't think any of us had much idea just how hard it would be adjusting to not being 'together'. I suppose I was lucky in a way because I was on placement with two members of our little family but I know others who were totally on their own (as in they had no one on placement with them from our community). At times it was puzzling, frustrating, lonely and left you feeling shocked and on occasion angry by the things you saw. Having access to PebblePad and being able to 'keep in touch' helped me immensely. On more than one occasion during placement I have had to question myself, my views and beliefs and without the aid of PebblePad and being able to share things with you all I would I may have joined others from our community and quit! You can become very blinkered about your views and only see one side of things no matter how self aware you are, having the opportunity to share these thoughts with others and ask for their input has been of tremendous help to me over the past few months. I can honestly say it has to be one of the best things I have learnt from my short time at university and I would sincerely like to thank ******* and ******* for giving us this wonderful learning opportunity THANK YOU!'

You can read the full case study here

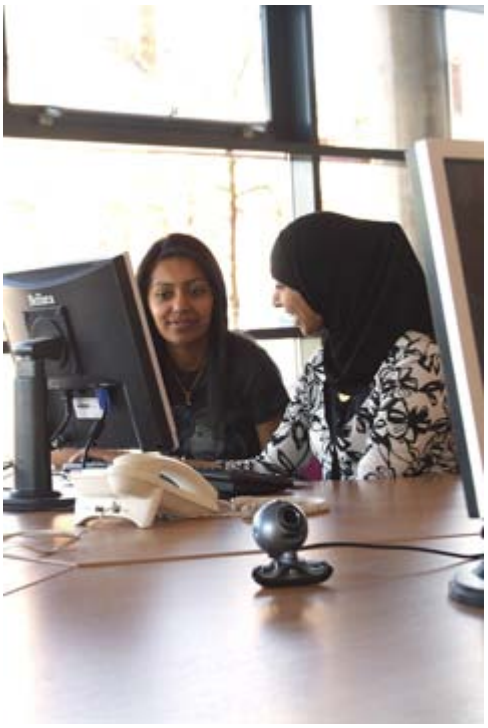
Personalisation

These drivers are also fuelled by the increased trend for personalisation in education which is about putting the learner at the heart of the system. This can mean identifying individual and group learning needs and tailoring services accordingly, by adapting information, teaching and support to these needs, opportunities and contexts. It can involve designing software that responds appropriately to the learner's changing ability as well as providing teachers with timely information through formative assessment. But personalisation is not just about learners choosing between a range of pre-existing options (shallow personalisation) but more about them becoming 'co-producers' involved in the design of the actual shape of these options (deep personalisation) (Leadbeater 2004). The key features of personalisation can be summarised in two words: choice and voice (Miliband 2006).

Resources

- Teaching and Learning 2020 Review
- Edinburgh Medical School's Vision 2000

Personalisation also goes beyond the formal system to acknowledge what learners bring from the rich and diverse experience of 'informal' learning. Flexible approaches to learning require flexible approaches to assessment of both readiness and achievement, including ways to identify evidence in a range of formats, and to store evidence over a lifetime. This would offer new opportunities to learners on the margins of the formal system, such as families, low achieving students, people in employment and those who have retired. Web 2.0 tools such as blogs, wikis, and photo sharing are currently popular because they enable personalisation by learners and social networking that can support the e-portfolio learning processes. But in the main, institutions are yet to capitalise on these possibilities.



The Teaching and Learning 2020 Review Group incorporate e-portfolios in their vision for schools. It anticipates that e-portfolios in the near future will allow tutors, pupils and parents to draw on information that a school holds about a pupil's record and achievements. 2020 Vision is making widespread use of e-portfolios as learning becomes more personalised and at a 'stage not an age'. Personalisation involves the learner in the planning, monitoring and evaluation of their learning, and in turn requires development of explicit skills of reflection and analysis. An example can be seen from Edinburgh Medical School's Vision 2000 in an extract from proceedings from a February 2008 conference organised by the Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine.

Purposes

An e-portfolio is ultimately a product, a purposeful aggregation of digital items, created by learners to present to an audience. Learners may create multiple e-portfolios for different purposes, from one or a number of repositories as represented in the model shown in the 'What are e-portfolios?' section. As presentational tools, e-portfolios can be used for a range of purposes, for example, demonstrating the outcomes of learning, applying for further study or employment, seeking registration with a professional body. An overview of JISC activities (2007) identifies some of the following key stages in a learning journey which e-portfolios might support:

Further Information

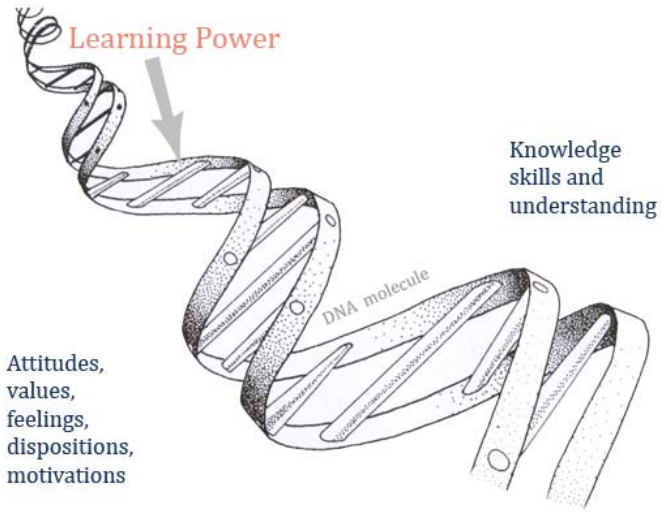
- JISC briefing paper: e-Portfolios - an overview of JISC activities

- Application - presenting evidence in support of admission to further study or for job applications
- Transition - providing a richer and more immediate picture of the learner's environment and supporting them through the process of transition
- Assessment - supporting the process of learning through reflection, discussion and formative assessment, and providing evidence for summative assessment
- PDP and CPD - supporting and evidencing the pursuit and achievement of personal or professional competences

However, e-portfolios are more than just presentational tools and have a key role to play. Behind any e-portfolio presentation lie rich and complex processes of reflecting, planning, synthesising, sharing, discussing, giving and receiving feedback. These activities - referred to as 'e-portfolio-based learning' - are the focus of increasing attention since the process of learning can be as important as the end product.

e-Portfolios enable the interrelationships and interconnectivity between the cognitive and learner values that underpin the learning process. McGettrick (2002) provides a visual conceptualisation of this interconnectivity, borrowing from the DNA double helix model.

Double Helix of Learning (McGettrick, 2002)



Learning Processes

Learning processes fundamentally underpin the creation of any portfolio, as well as being a strong institutional driver. The creation of an e-portfolio involves one or more processes which can employ and develop a range of learning skills which are shown in the PLTS framework below. This model, based on the Kolb cycle of experiential learning, illustrates a process of continuous reflective learning, promoted and sustained through contact with others. It focuses on skills sets which enable young people to be more adaptable and effective learners and which employers and higher education want to see developed. Six skills 'groups' are identified: independent enquirers; creative thinkers; reflective learners; team workers; self managers and effective participators.

'E-portfolio processes and tools for organisation and communication support the learning outcomes of students with a wide range of abilities. Learners also develop ICT skills through using these tools, thus achieving curriculum outcomes through purposeful activity.'

'Impact of e-portfolios on learning', Becta study (2007) p.4

Capturing and storing evidence

Learners record evidence for development or presentation either gathered in the research process or as they progress. Evidence might include ideas, photos, videos, coursework, feedback, formal achievement records. Selection is an important process - not all evidence may be relevant and there may be technical limitations to the amount of data stored (see section on Access, Authentication and Storage).

In the myWORLD project, a group of Visual and Performing Arts students at the University of Brighton recognised the benefits of using e-portfolio for collecting, storing and organising work. In some ways, they preferred the emphasis on this process rather than simply creating a CV, for instance.

The Wolf project has gathered interesting data about the use of PDAs by Teaching Assistants to capture evidence within early years environments. There was then the opportunity to share as a group. One student had mobility, visual and auditory challenges and found that using the device added value to her learning experience

Related resources

- myWORLD Case Study and Resources
- WoLF Case Study and Resources

Reflecting

Reflection is a critical process which supports the creation of an e-portfolio. The process can lead to deeper learning through self-reflection and the outcomes inform planning, goal-setting and future reflection. Reflection develops a range of skills which underpin personalised learning including self-assessment and critical thinking. Reflection can also be a collaborative process. Tools supporting reflective practice include blogs and wikis which can be drawn together with other forms of evidence into an e-portfolio to provide a holistic picture of the individual learner.

The FILE-PASS project noted 'All students involved in this project have found the writing of blog entries to be a useful process in expressing their thoughts and feelings on a variety of issues and experiences.' (Final Report, p11).

Related resources

- Reflection - further reading
- FILE-PASS Case Study and Resources
- Other case studies associated with Reflection

A number of ongoing projects are also addressing Reflection:

- Full project list [MS Excel]

Giving and receiving feedback

As part of the collaborative process, tutors, peers and other audiences give feedback to the individual learner which can support both formative assessment and assessment of learning. The learner can in turn provide feedback to support peers. The evaluation of the Kent PLPP project showed that learners valued receiving regular feedback about their progress but expressed disappointment that tutors did not maximise the learning portal for this purpose.

Related resources

- Assessment - further reading
- Kent PLPP Case Study

Planning and setting goals

As a result of reflection and as part of the reflective process, learners are able to see gaps in their experience and achievements and match these with opportunities. They can then start to plan and set goals, e.g. planning for assessment, guiding future learning and career aspirations. This enables the learner to be realistic about their objectives and to plan longer term. The process can develop organisational skills and aid motivation. Tools could include e.g. electronic calendars and blogs.

In the ISLE project, NQ2 Performing Arts students at Ayr College created an e-portfolio to record their current and future career and study plans. Students recognised the value of the process to help plan for the future and timetable their lives more effectively.

Related resources

- PDP - further reading
- ISLE: PDP in Practice
- ISLE Case Study
- Other case studies associated with Planning and Goal-Setting

Collaborating

Collaboration and feedback are part of a social learning process which centres on communication and can support assessment for learning. The process can involve learners, peers, tutors, employers, parents and can be cross-institutional. The VLE provides a platform through discussion forums as does an e-mail system, blog, wiki or social networking tool. The advantage of an e-portfolio is that it can potentially aggregate the evidence acquired from these tools in the process of collaboration. Evidence shows that collaborative learning through e-portfolios is more common in a primary school or professional context than at FE/Secondary level (cf. Becta research). Older learners can be reluctant to share personal information and experiences with others.

However, mature learners in the FILE-PASS project were particularly receptive to collaborative activities: 'The use of e-portfolios with this learner group (mature learners) resulted in a greater appreciation of collaboration and collaborative learning.' This illustrates how e-portfolios can be collaborative as well as personal working spaces.

Related resources

- FILE-PASS Case Study and Resources
- ELP Case Study

Presenting to an audience

As well as being part of the learning process, presentation is the key purpose of creating any e-portfolio. Learners can present the products of learning in different ways for different audiences (e.g. tutors, peers, careers advisers, employers, admissions officers, parents) and purposes (e.g. for assessment, UCAS application, job application, showcasing work). The process of presentation also involves learners representing themselves. The processes of reflection, goal-setting, collaboration and feedback, for instance, can increase confidence and self-motivation to enable learners to better get across their skills and achievements.

From the FILE-PASS project, it was clear that the ability to promote their own work and publish to the internet was very motivational for learners (FILE-PASS Project Appendix 2). However, learners may find developing a promotional e-portfolio challenging because they have to present an integrated representation of themselves from their personal and professional lives (Cambridge 2005).

Related resources

- FILE-PASS Case Study
- ELP Case Study
- ePISTLE Case Study
- myWORLD Case Study

Supporting Application

Examples of e-Portfolio Projects Supporting Application

A number of specific links to Case Studies and resources are given below; there are however many other projects which are investigating the use of e-portfolio in supporting application. You can view a catalogue of all projects detailing their main purpose here.

e-Portfolios provide an opportunity for learners to present a richer picture of experience and achievement as evidence in an application for entrance to university or for employment, training or placements although the use of e-portfolios for this purpose is at different stages of maturity.

A number of JISC projects are investigating issues around application to university, applying for jobs or work placements through building CVs that provide a far richer picture of learners' achievements and experience than was previously possible.

Access to Further and Higher Education

Facilitating progression from school or college to higher education and improving access to higher education is a key part of widening participation and lifelong learning agendas. Raising aspirations and enabling learners to present a more holistic picture of their achievements as part of the application process are important elements of achieving these.

Resources

- ELP Case Study and Resources
- ePISTLE Case Study and Resources
- Learning Matrix Case Study and Resources
- ePISTLE Guidelines 2: Entry to HE [see Guideline 5.2]
- PDP4LX2 Case Study
- SOLVS Case Study

In the ELP project which explored how e-portfolios could support progression to HE, learners found the use of an e-portfolio helpful in thinking about going and applying to university. They particularly liked recording and evidencing the experiences and skills that they had which would be useful to include on a UCAS Personal Statement. One particular case study aimed to encourage students in local FE and sixth form colleges with lower than average levels of HE participation to apply to medicine and other health-related courses by using the e-portfolio system for this purpose. This process helped raise awareness of career choices and skills requirements in these disciplines as well as reflections on personal attributes and competences. 71% of students involved in the case study were successful in being offered a place to study on highly competitive medicine or healthcare courses compared to the national average of 11%. This suggests that the skills and knowledge gained in developing e-portfolios for application to HE have a positive impact on increasing participation.

From the perspective of admissions tutors in the ePISTLE project, there were some concerns about introducing e-portfolios as part of the admissions process to HE. These included increasing admissions' tutor time, establishing and applying equitable criteria to evaluate information presented in e-portfolios and the difficulties in combining them with traditional admission methods/modes such as forms and interviews. It was generally agreed that in the immediate future best use of e-portfolios for entry to HE would be as complementary, not replacement evidence for application.

Admission to Higher Education

The Schwartz Review of admissions to HE includes a definition of 'fair admissions', drawing upon e-portfolios for richer applicant information to aid widening participation and progression to HE. JISC projects have been working with UCAS, the national entry system to higher education, to determine the potential for e-portfolios in admissions to higher education within the broader context of supporting the effective use of technology in HE admissions processes. The Specifying an e-Portfolio project developed a technical framework to enable the widespread use of enhanced learner information within more flexible HE admissions processes. Building on this, the DELIA project is seeking to redefine course entry profiles and make them interoperable with structured references and structured personal statements.

Resources

- Specifying an e-Portfolio (Final report)
- DELIA Project
- PortisHEad Project
- eP4LL Project
- Schwartz Review of Admissions

The PortisHEad project at the University of Wolverhampton is investigating and trialling the use of e-portfolios in admissions, including students from local feeder colleges using e-portfolios 'for real' in their application to Wolverhampton which creates a real life context of use for the reference model developed through the earlier e-Portfolio for Lifelong Learning project (eP4LL).

The growing diversity of qualifications can be an administrative burden for university admissions systems. The University of Derby is looking at how e-portfolio-type technology can facilitate recognition for Accreditation for Prior Experiential Learning (APEL) claimed by many learners in Learning through Work programmes. By facilitating the gathering of information and self-assessment through improved technologies, the likely benefits are likely to improve learners' decision-making as well as streamline application processes where APEL claims are submitted.

Application for employment and training

There is considerable potential for e-portfolios to support application for employment be this for work placement, training or full-time employment. This can be done through building CVs for application as well as developing skills such as collecting evidence and reflection.

Resources

- myWORLD Case Study and Resources
- ELP Case Study and Resources
- ePISTLE Case Study and Resources
- ePISTLE Guidelines 3: Transition

As part of the myWORLD project, Plumpton College enabled students in their final year of the Viticulture BSc to take a 10 point Career Development module. The e-portfolio was introduced to encourage learners to reflect on their personal skills and collect and select evidence to support their job applications. Rather than producing a standard CV, the learners were encouraged to use it as a development tool to track skills and experience. They could see the benefits of enriching their CVs in this way and felt it could give them competitive advantage with employers. By providing potential employers with a link to supplementary information about their experiences in their e-portfolio, it could help differentiate applicants and give 'a better insight into what you're about.' (myWorld final report p.16).

e-Portfolios can be used to showcase work for progression and employment. This has been explored in a disciplines such as the creative industries (PDP4Life, PDP4XL2, SOLVS), health (ELP) and teacher training. For example, in the ePISTLE project which focused on the role of e-portfolio in teacher training, one of the participating schools was keen to use the e-portfolio to showcase learners' work with local employers.

Building CVs

In supporting lifelong learners in the East of England, the EELLS project developed a learning portal with a range of utilities including a showcase and CV builder which could be used to present materials to prospective employers. The Shibboleth CV builder project is developing a web service-based CV builder to extract relevant personal data from institutional systems using Shibboleth.

Resources

- Europass
- EELLs Presentation [Powerpoint]

Supporting student mobility is a key priority of the Bologna Process and the Europe-wide Europass scheme seeks to facilitate this through a series of electronic document standards including a Europass CV. As part of the EPICS project, the University of Newcastle piloted transferring data using this standard in its ePet e-portfolio system. ePET can now export and import XML data in the Europass-CV standard. Although further work is to be developed, this shows the potential of e-portfolios to support student mobility.

Some International Examples

- LaGuardia
- Minnesota: Lifelong and Lifewide e-Portfolio
- Florida State University: Career Portfolio

Supporting Transition

Examples of e-Portfolio Projects Supporting Transition

A number of specific links to Case Studies and resources are given below; there are however many other projects which are investigating the use of e-portfolio in supporting transition. You can view a catalogue of all projects detailing their main purpose here.

Transition is about supporting the learner through the lifelong learning process - facilitating progression between different environments (e.g. school to HE; HE to employment) by developing the necessary skills (e.g. personal planning, reflection, presentation, independent learning) to prepare for transition and facilitating interoperability between different organisational systems. In so doing, widening participation and lifelong learning can be better achieved.

Developing skills

"e-Portfolios support lifelong learning when institutions across all phases work together in a regional approach to make the learner's pathway relatively straightforward and share the knowledge they are gaining from current implementation" (Becta. 2007. 'Impact of e-portfolios on learning [PDF: 587Kb]')

The ELP project explored transition in a range of contexts: Access to HE for schools/FE, HE in workplace settings and transferring between HEIs. By piloting e-portfolio use in these different contexts with a range of learners, the project has identified a number of key benefits of transition for learners such as increased motivation, being able to better plan for the future and make more realistic career choices. Based on project outcomes, the ePISTLE project has also produced guidance on e-portfolios for transition and progression [ePISTLE Guidelines 3: Transition].

The Kent Personal Learning Portal Pilot (Kent PLPP) project aimed to support non-traditional learners by providing web-based access to HE resources and e-portfolio tools to help orientation and skills development for transition to HE. The partnership between the University of Kent and Canterbury Christ Church University demonstrated the potential for sharing resources and expertise to support non-traditional learners entering HE from an FE or other access route.

JOSEPH has built a tool which supports decision-making by learners to prepare for transition points, using e-learning processes developed with Information Advice and Guidance (IAG) professionals. The focus of the project was IAG for pathways in Engineering, especially those piloting the new specialised diploma in Engineering, but the tool also has generic application.

Resources

- ELP Case Study and Resources
- Kent PLPP Case Study and Resources
- RIPPLL Case Study and Resources
- ePISTLE Guidelines 3: Transition
- JOESPH Resources
- eReturn Case Study
- myPlan Evaluation Report

Facilitating data transfer

A key issue in supporting transition is the transferability of data between different environments. A number of JISC projects have demonstrated that working in partnership and collaboration at a regional level are critical to enabling interoperability. Building on an earlier project which trialled interoperability between PDP systems in 14-19 education and HE, the RIPPLL project studied the requirements of a wide range of users in different learning environments (e.g. work-based learning, vocational pathways). Through a partnership of higher education institutions, further education colleges, local authorities and employers in the Nottinghamshire area, the project aimed to improve interoperability between PDP systems in the region. It demonstrated that data could be exchanged successfully between different administrative and e-portfolio systems so as to support the continuity of individual career journeys across transitions between episodes of lifelong learning, specifically episodes of study or work provided by schools, colleges, universities and an employer.

Supporting Assessment

Examples of e-Portfolio Projects Supporting Assessment

A number of specific links to Case Studies and resources are given below; there are however many other projects which are investigating the use of e-portfolio in supporting assessment. You can view a catalogue of all projects detailing their main purpose here.

'...if we wish to enable students to develop as self-regulating learners they must be given a more active role in assessment processes.'

REAP project

A difference in focus has emerged between e-portfolio tools designed primarily for institutional assessment purposes - for example, demonstrating achievement, recording progress and setting targets, as in records of achievement and individual learning plans (ILPs) - and systems which aim to nurture a continuing process of personal development and reflective learning, more commonly used in higher and continuing education contexts. These uses are not, of course,

mutually exclusive and in certain disciplines such as medicine and healthcare, e-portfolios are commonly used to support both areas.

Formative assessment is seen as an integral part of e-portfolio-based learning as it encourages self-analysis, critiquing and informal feedback for peers and tutors as key elements of the learning process. However, this approach tends be adopted in HE contexts whereas the emphasis is more on using e-portfolios for summative assessment in the FE sector. Given the learner-centred nature of e-portfolios, there are different views on whether they should be used for summative assessment although there are benefits to a more holistic, evidence-based approach [ePISTLE Guidelines 3: Transition].

Resources

- ePISTLE Guidelines 3: Transition
- QCDA Blueprint for e-Assessment
- REAP Booklet
- Assessment Guidance
- Podcast on assessment and the 'paper-free' e-portfolio

e-Portfolios support a more dialogical, incremental approach to assessment helping a move away from traditional forms such as submitted assignments and examinations which could help reduce the assessment burden for institutions. Redesigning assessment practices in HE has been explored in the REAP project which looks at how new technology can support new assessment models for the benefit of learners and institutions. Among other tools, e-portfolio tools have a key part to play in this as recognised by the QCA in its Blueprint for e-Assessment which has advised that all awarding bodies should be able to accept e-portfolios by 2009. Our section on Assessment Guidance discusses these issues in further detail.

There are a range of contexts and settings in which e-portfolios could be used to support assessment and related learning and support processes as a number of JISC projects are exploring. The use of e-portfolios has developed particularly in disciplines which are traditionally evidence-based such as healthcare, education and the creative industries.

The ELGG e-portfolio used as part of the HELPP project at Hull College proved a useful assessment tool on the HNC Engineering programmes. The Engineering Tutor talks about the experiences in using the tool to support a major project that each student is required to work on, and in the past had been produced in hard copy only. *"... it's letting me adopt a more formative approach. I'm able to look at how things are progressing and give them feedback in a periodic nature rather than looking at it at the end, marking it, and ... saying, 'there you go'... and again the good thing is the way that I'm assessing it... Slowly but surely people are getting into it and I think they realise the benefit of having it there because they can talk to me rather than messing about and opening different packages and all that sort of thing so the flexibility's very good... they are able to upload a multitude of different files, videos, PowerPoint documents, Microsoft Project documents, lots and lots of different bits of information that otherwise would be just a paper source, so we're able to look dynamically at the information."* Recording from HELPP website.

Healthcare and Medicine

General Medical Council guidelines and QAA requirements have supported the development of e-portfolios as a method to help foster a reflective approach to evidencing the achievement of both module-specific and programme learning outcomes in medical education. Newcastle University, for instance, introduced e-portfolios in its undergraduate medical degree programme in 2003. Following successful pilot initiatives at different stages of the curriculum, the use of e-portfolios has been rolled out across the programme and they have been used extensively for summative assessment and appraisal as well as reflective practice.

The HORUS e-Learning Management project (HELM) extended the application of the HORUS tool to support doctors-in-training learn in the workplace by expanding its use as a reflective log for learning as well as supporting the

assessment cycle by providing an online area for learners to record their workplace assessments which tutors access and grade.

The MANSLE project showed how aggregated e-portfolio services could play a significant role in supporting lifelong learning and student progression in clinical practice settings. A key responsibility of practice tutors within these settings are responsible for overseeing student competency claims, and the making and validation of such claims needs to be efficient and feed directly into the enhancing the skills repertoire. e-Portfolios could play a part in making this assessment process more efficient in a work-based environment.

Links relating to Healthcare and Medicine

- HeLM Case Study
- HeLM project website
- MANSLE Case Study and Resources
- Newcastle MEDEV Tangible Benefits Case Study

Education

There is a requirement for trainer teachers in FE to compile a portfolio of work which they can then take forward as they move into a professional teaching career, and use as the basis for their ongoing Continuing Professional Development. A number of projects have looked at e-portfolio development in this area. For example, the ESCalate subject centre of the Higher Education Academy undertook a study into the transferability of e-portfolios in education which investigated existing e-portfolios models and their use in the field.

One of the aims of the ePISTLE project was to gain an understanding of how e-portfolios are used by learners and assessing bodies when submitted for assessment as part of teacher training. A key finding was that "e-portfolio use can clinch vital points of understanding through rapid closure of feedback loops; a prompt response from a tutor can consolidate a central point of understanding in the mind of a student, rather than prolonging a hiatus of uncertainty characteristic of time delays in traditional formative assessment cycles"(ePISTLE Final Report, p13). This fluid process has also helped reduce the build-up of assessment for tutors and diminishing pressure at key assessment points.

Links relating to Education

- ESCalate e-Portfolio project
- ePISTLE Case Study
- WOLF project website
- WOLF project video (flv)
- ESCalate e-Portfolio project
- Examples of mobile technology (WoLF)

One project at Leicester College and the University of Leicester, WOLF, explored how mobile technologies in the form of pocket PCs can support teaching assistants on foundation degree courses in reflecting and collecting evidence for training in a work-based setting.

The Helpp project is looking at digital media to record workplace experiences and to use e-portfolio to present evidence for assessment, particular with regard to storing assessments and reflection in portable formats. The project has produced a video which explains tutor usage and also how students feel the system is helping them to gain the most from their placements.

The Higher Education Academy Subject Centre Distributed e-Learning e-portfolios projects provide a range of examples of use in different disciplines. Assessment is just one area explored in most of these:

- Art, Design and Media
- Bioscience
- Built Environment
- Economics
- Law
- Physical Sciences
- Psychology

Supporting Personal Development Planning (PDP), Continuing Professional Development (CPD) and Lifelong Learning

Examples of e-Portfolio Projects Supporting PDP and CPD

A number of specific links to Case Studies and resources are given below; there are however many other projects which are investigating the use of e-portfolio in supporting PDP and CPD. You can view a catalogue of all projects detailing their main purpose here.

'PDP is essentially a process... is a student opportunity to reflect plan and review learning... is related to the development of transferable skills... can and should result in a range of useful products... e-portfolios can play a part in the process and be a medium for products.'

EPICS Final Report

e-Portfolios can provide 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. A number of projects are exploring the role of e-portfolio tools and systems in supporting lifelong learning through PDP and CPD practices.

Supporting personal and career development planning

The three Lifelong Learning Networks in the North West region, involving nine universities and a larger number of further education colleges, are working in partnership through the SOLVS project to provide support to vocational learners. The project will develop an approach to personal development planning in the health, social care and creative industries sectors in the first instance. A learner portal for each sector will enable learners in employment to plan routes for their career and personal development, and provide ways to search for learning opportunities from multiple providers that fit their needs. e-Portfolio facilities will help them present applications to enrol on courses.

The L4ALL project developed a web portal to support lifelong learners in London by allowing access to information and resources, to plan their own learning pathways, and to maintain a record of their learning. Tutors are able to publish recommended pathways through courses and modules and learners can share their learning pathways with other learners (if they wish) in order to encourage collaborative formulation of future learning goals and aspirations. The myPlan project is building on this by exploring tools to improve support for personalisation in progression planning.

Resources

- FILE-PASS Case Study
- myWORLD Case Study
- MyPlan project website
- PDP and e-Portfolios
- WoLF Case Study
- EPICS-2 Case Study

Reflection is an important process in planning for personal development and CPD. The FILE-PASS project, for example, explored ways to support 'isolated' (or 'independent') learners by using e-portfolios to help reflect on experience and skills to help plan longer term goals at a range of educational stages from those outside education to Masters-level students. The project learned that more mature students (e.g. adult returners) in particular were more receptive to benefits of e-portfolio in helping to identify skills.

Using e-portfolios to reflect on skills was an important element of building CVs and thinking about future career aspiration in the Plumpton College Viticulture course scenario as part of the myWORLD project.

At the University of Greenwich, over 2000 learners were introduced to the e-portfolio to help them to undertake a form of PDP which included self assessment, followed by the development of action points and then reflection. Weekly tasks helped learners to engage with PDP and focused mainly on career and study skills.

As part of the Blossom Project, learners at Queen Margaret University (QMU) enjoyed using PebblePad for their PDP and intend to continue using the system after they graduate. To enable this, QMU are trialling Alumni access to the system. QMU also found that when academic staff use an e-portfolio for their PDP/CPD, for example during their PhD studies, this has a beneficial effect on how their learners view using e-portfolios.

Undergraduate students at Newcastle University used the Janet txt service to add blog content to their e-portfolio via an opt-in service. However, students on placement were concerned that to use their mobile phone in the workplace would appear unprofessional, and in a hospital setting problematic. These issues were addressed in training sessions.

Presentation of work for professional accreditation and appraisal

e-Portfolios can improve the process of CPD for professionals in a number of ways such as drawing down data from a membership database to create a CV, using evidence for appraisal and presenting evidence for accreditation. Professional bodies are increasingly employing e-portfolio systems to enable members to engage more fully with CPD. The Institute for Learning (IfL), for example, is introducing the optional use of e-portfolios to record the statutory 30 hours of CPD now required of the 300,000 practitioners in further education in England. This is being promoted through its REfLECT pilot project.

The Thames Valley Professional Institutes Partnership (TVPIP) and the Chartered Management Institute (CMI) are also realising the potential of e-portfolios to support professionals' continuing professional development. The myWORLD project found that maintaining an e-portfolio could allow members to record their CPD, set targets, and demonstrate how they've applied their skills. The resulting e-portfolio could be used to organise evidence to encourage applications for Chartered Management accreditation, as well for other CVs, job applications or own marketing.

The University of Westminster introduced e-portfolios for School of Architecture and Built Environment students at levels 4 and 6 to enable them to gather and reflect on evidence of skills in order to meet the CPD requirements of professional bodies such as RIBA.

From an institutional point of view, e-portfolios have the potential to be used for staff appraisals. The Flourish project explored the use of e-portfolio to support learning, teaching and research practitioners at the University of Cumbria for a variety of professional purposes including career review, academic qualification, professional accreditation and personal development. The project team has found that for a small test group undergoing appraisal using e-portfolios, the transition from a familiar paper-based model to an electronic one led to deeper analysis of the nature of appraisal itself.

Thanet College has made a film about the experience of staff in 'Taking ownership of CPD' and their use of e-portfolios.

We explore the views of a number of stakeholders in more detail, including professional bodies, in the Perspectives section of this resource.

Resources

- IfL REfLECT website
- University of Westminster case study
- Flourish Case Study
- PDP and e-Portfolios

Perspectives

How users and audiences en gage with e-portfolios and related learning activities and perceive their potential benefits is a critical factor in their success. JISC projects have worked with a range of user groups including different types of learners and practitioners in varied educational contexts and have explored how different audiences, in particular employers and professional bodies, respond to e-portfolios.

Learners

Learners have varied responses to e-portfolios depending upon their previous experiences, attitudes to IT, independent learning, tutor engagement and understanding of the process.

Tutors

Tutor engagement is vital to the successful implementation of e-portfolios. Learners will not commit to developing and maintaining an e-portfolio if there is no continuing support provided by tutors.

Employers

There is a diverse response to e-portfolios by employers for recruitment, PDP and work-based learning purposes depending on the sector although further work is being done to increase understanding of real benefits in this area, particularly in the context of employability.

Professional bodies

Increasing interest and use of e-portfolios for CPD and accreditation amongst some professional bodies is acting as a driver for implementation within the curriculum.

Institutions

As institutional policies in higher and further education institutions are shaped by various drivers, they are likely to take an holistic view of e-portfolio implementation and use, considering how this can bring maximum benefit to a range of constituencies and stakeholders.

We have also recommended various 'pathways' through the material based on the perspective views. You can see these recommendations alongside a host of other resources on our e-portfolios portal page.

Learners' Perspectives

Learners have varied responses to e-portfolios depending upon their previous experiences, attitudes to IT, independent learning skill level, tutor engagement and understanding of the process.

> *'The learners were well aware of, and able to articulate the potential benefits of using the e-portfolio tool. They saw one of the strengths of the system as the creation of a personal database, where they could collect together a wide range of information which would be accessible from any computer at any time, and from which they could choose to share some of the contents with others. They saw working in such a system as good preparation for the future in terms of producing a structured CV and developing IT skills.'*
>
> myWORLD Final Report p.14

JISC projects such as EELLS, MANSLE and FILE-PASS have explored with learners their perceptions of e-portfolios and their role in supporting learning, for example, the FILE-PASS project sought the views of 'isolated' learners about e-portfolios.

A video has been produced by the Helpp project of learners at Hull College discussing their use of an e-portfolio for supporting reflection on placements.

Learner engagement with e-portfolios

Research shows that learners like e-portfolios because they can:

- be customised and personalised
- be used to demonstrate their technical skills (Amber and Czech 2002)
- be viewed by others including tutors, peers and potential employers. This ability to promote a learner's work can lead to greater engagement and pride in the finished project (Aschermann 1999; Strivens 2006). In the FILE-PASS project, students liked being able to publish their work to the internet and found this highly motivating
- include multimedia such as evidence captured through mobile phones
- help with employability. For example, first year learners at Penn State University liked being introduced to résumé (CV) writing since it helped prepare them for work (DiBiase 2002)
- provide a one-stop shop for all their work

Resources

- Customisation
- Personalisation
- FILE-PASS Final Report: Appendix B
- Presentation: Developing an ePortfolio culture from the early years (Hartnell-Young)
- ePISTLE 2006 Report
- ePISTLE 2007 Report

However, learners' responses to e-portfolios will vary and this may reflect:

- cultural differences towards the e-portfolio and PDP (Personal Development Planning): 'Many British universities include significant numbers of students from differing cultural backgrounds, both within and beyond the UK, at undergraduate and postgraduate level. ... The different approaches to study, learning and even degree of focus on the individual, together with varying motives for undertaking study may be

important influences on whether someone is inclined to use an e-portfolio.' (ePISTLE report on factors affecting use/non-use of ePortfolios by learners, July 2006)

- computer usage at work. The ePISTLE project found that learners who were already using computers in full-time jobs were often less inclined to want to spend further time working with a computer during their evenings
- fear of who has access to online lifelong learning records. A group of learners as part of the PDP4Life (Personal Development Planning for Progression and Lifelong Learning) Project were concerned that lifelong learning e-portfolios would be 'state-controlled'.

An example of where learner attitudes may differ is in sharing of materials. Some showed a positive attitude to sharing their promotional presentations through the internet (*'I have learnt about sharing presentations with others which is very useful.'* FILE-PASS) or sharing for feedback and support from peers and/or mentors (ePISTLE). The experience in the ISLE project, however, showed that there was greater reluctance to share personal reflections and a concern over who had access to their work. Similarly, learners in the MANSLE project were reluctant to allow public access to potential employers or educational institutions.

Quote from HELPP project on online reflection by Foundation Health and Science Route student' - "... I found reflecting difficult anyway, just doing it in a diary and the thought of then publishing that... thoughts that (I) prefer to be kept private to be put on the web was a little bit scary to start with."

Learner engagement with Personal Development Planning

Learners may not always engage with PDP (Personal Development Planning) as the ISLE and Learning Matrix projects found. Learners in the early stages of their programme, particularly school leavers, may find it difficult to relate PDP to employment prospects. This could be a reflection on education as a whole, which encourages specialisation at an early age and as a result, learners take 'a jumping through hoops' perspective on education to obtain their qualification and hence recording their learning through an e-portfolio is not something that seems immediately relevant to gain better marks for an assessment.

> *'...personal development and planning for life after university is not a priority for most students.'*
>
> Cartledge (2007)

Resources

- Robert Johnson's report
- ISLE Comparative Study of FE/HE PDP experiences
- University of Westminster article
- PDP4XL2 Case Study

Robert Johnson from the University of Warwick reporting on a first year initiative to introduce PDP also had a mixed response with some students avoiding meetings with tutors rather than discussing PDP. Students would often want to know if PDP was assessed.

In contrast, mature learners are more likely to see the link between e-portfolio and employability and hence value PDP. Their life experiences may mean that PDP is more relevant to their studies and aspirations. Encouraging students to look at the 'bigger picture' of future careers would appear to require more focus at an earlier stage in the educational process. Quote from part-time engineering student as part of the HELPP project *'I've already started on my blogger site a little thing on my own life really, seeing what I actually want to do in the future so I've already taken ELGG and actually used it in my day-to-day life rather than just college because you've got to draw a line at College with what you're going to comment on, and you know, what you're going to comment on in other aspects of your life.'*

PDP4XL2 Occupational Therapy students were encouraged to use the e-portfolio tool as part of Bournemouth University's VLE (Blackboard) but they found that the tool did not support reflection and PDP but acted more as a repository. PDP4XL2 Learners at the Arts Institute engaged with the reflective aspects of PDP throughout their studies but were unsure if they would continue after completing their course due to the practicality of not having easy access to a computer. With regard to the design of e-portfolio tools PDP4XL2 project found that learners want easy-to-use systems that allow a multitude of file formats for the assets. They do not want to be restricted by templates. NHS employees are concerned about possible fraud and require assurances that the system is secure.

This is similar to the feedback from learners who used the University of Westminster e-portfolio system for study skills - learners who were nearer to completing their studies engaged more with the PDP elements of the modules whereas younger learners were more focused on assessment.

The second stage of the PDP4Life project, PDP4XL2 provides further information about learner attitudes in health and the creative industries to PDP.

The benefits of e-portfolios for learners

...for Application to HE

'Students found the use of an e-portfolio useful in thinking about going and applying to university. They particularly liked recording and evidencing the skills they had which would be useful to include university application Personal Statement.' (ELP Case Study 1)

'So far when using the e-portfolio I have thought about decisions more and I question more things' (ELP Case Study 3)

'It makes you more motivated and you look forward to applying to the course you want, so you feel more confident.' (ELP Case Study 3)

...for Application for employment

'I would use it if I was looking for jobs abroad I would find it extremely useful to be able to write to Mondavi and say here's my base CV, click on this link and you'll learn much more about my experience... It's a very good way of a) differentiating yourself because not that many people do it and b) not wasting time because somebody can have a better insight as to what you're about.' [Learner at focus group - myWORLD final report p.16]

...for Reflection

'If I'd come into it really fresh and I didn't know what I was going to do and I knew I had a passion for wine but I wasn't quite sure which way my personal skills were going to go I find doing this quite useful because it made me think about a much more structured way whether I was going to long term be happy in a vineyard or would I be happy in a winery.' [Learner at focus group - myWORLD final report p.16]

Using e-Portfolios: Some Key Benefits for Learners

encourage reflective learning

aid personal development planning

promote self-awareness, knowledge, esteem and confidence

develop learner autonomy

smooth the transition between learning institutions

help with career progression, employability or further study

help learners to articulate/present their skills and achievements to third parties

help the learner become more independent and autonomous

help the learning process towards learning goals/achievements

instil in learners relevant professional attitudes and responsibilities

encourage learner-centred support from institutions

help learners articulate their strengths and achievements to an audience

...for Planning

Darren Cambridge's research at Minnesota University in the USA found that educational planning was extremely important to the learners because:

'Their portfolios are expressions of both who they've been and who they'd like to be. Jeff, a graduate student and systems administrator, thinks of a portfolio as 'a picture, a text picture of ones life, past, ...current, maybe future, ... where your dreams are, goals are.' As well as representation of capabilities and aspirations, a portfolio serves as a 'central repository' of the author's ideas and experiences on which he or she can reflect in making decisions about the future. Because eFolio 'prompts [him] to look back,' Jeff is better able to make informed choice about the future. 'Once I look and see an overall view of all the different things, it is kind of directing me to hey maybe I need to look at different things in my career too, even my teaching.' (Cambridge 2005).

Practitioners' Perspectives

Tutor engagement is vital to the successful implementation of e-portfolios. Learners will not commit to developing and maintaining an e-portfolio if there is no continuing support provided by tutors.

The advantages of e-portfolios as viewed by tutors include:

- raising learner self-awareness, confidence and self-esteem
- helping the learner to become more independent and autonomous
- focusing the learning on the learning outcomes
- facilitating in learners' relevant professional attitudes and responsibilities
- opportunities for collaborative working and social computing
- providing a more structured and focused approach to managing personal development for learners
- preparing learners for the 'competency-based world of work'
    - assisting 'fragile' learners to organise themselves and their work
    - helping learners to articulate/present their skills and achievements to third parties, for example at interviews which may help with career progression
    - learners being able to include evidence of a wider range of artefacts including multimedia

> *The success [of the e-portfolios] did not seem to depend on the level of the learner, their age or gender but on marrying the enthusiasm of staff with the appropriate software for the learner.*
>
> FILE-PASS final report, p.4

Source: Various[1]

Tutor enthusiasm, interest and commitment are essential for learner engagement with e-portfolios. Staff development, protected time to familiarise themselves with the e-portfolio and a strong institutional vision will ensure that tutors are able to implement e-portfolios more effectively. JISC in *'e-Portfolios can really make a difference'* show how exploring e-portfolio use alongside learners enables each to learn from the other, with some unexpected gains. Peter Lumsden outlines how tutors have been encouraged to engage with PDP at the University of Central Lancashire (UCLAN).

At the regional forum as part of the EPICS project, there was less interest in PDP amongst more research-led as opposed to the more teaching-oriented institutions. Tutors may also find it difficult to integrate e-portfolios and PDP into the curriculum because of competing demands in an already over-full curricula. Janet Scammell discussed such concern in her presentation on 'The challenges and potential of PDP for health professional learners', at a PDP4Life dissemination event in April 2007.

At Queen Margaret University, a partner in the Blossom Project, it was found that staff who are required to demonstrate CPD as part of their continuing professional accreditation, not only employed PebblePad for their own use but were able to enthuse their learners to engage with e-portfolios.

Resources

- FILE-PASS Case Study and Resources
- EPICS Case Study and Resources
- PDP at UCLAN featured in CRA newsletter
- Presentation: The challenges and potential of PDP for health professional learners (Scammell)
- Guidance for Tutors

[1]*JISC projects, Dartmouth's experience of e-portfolios, Hartnell-Young (2008),Siemens 2004; Love et al. 2004; Gathercoal et al. 2002; Cotterill et al. 2004; Amber & Czech 2002; Oradini and Saunders.*

Employers' Perspectives

Improving the employability of learners and engaging effectively with employers are drivers shaping (and reshaping) approaches to learning and skills development across the education sector. e-Portfolios have the potential to play a part in presenting achievement for recruitment as well as work-based learning, PDP, CPD and appraisal. However, employer engagement with e-portfolios and perceived benefits are areas not fully known and require further research and investigation. Part of the PDP for Cross-Institutional Lifelong Learning project (PDP4XL2) project has been looking at employer perspectives on PDP and e-portfolio within the creative industries. There appears to be a variation in employer attitudes to e-portfolio presentations of applicants' PDP records. Some were enthusiastic about a better chance of understanding the individual more fully whilst others were concerned that it would make the selection process more time consuming.

Views from the Creative Industries

- e-Portfolios allow employers to recruit on attitude rather than merely skills
- e-Portfolios can allow employers to see the spirit of the person
- The creative industries rely on networking and paper based methods to recruit but this process fails to assist employers in revealing the kind of person they seek - e-portfolios could improve this process
- There is a desperate need to access individuality, key strength, passion and essence of a person

(Adapted from Hanson, J and Uddin, A (2007)) 'E-portfolios: employability or engagement?'

"If differentiation has a personal element, it gets at the spirit of the person, so you feel like you know the person through a personal account of themselves. I think that makes all the difference"

(Employer from the creative industry, PDP4XL2 project)

Using an e-portfolio for Continuing Professional Development

There are very differing and diverse attitudes to

e-portfolios for supporting PDP and CPD amongst employers. Many employers understand that their employees need to constantly update their skills and to engage in CPD (Continuing Professional Development) to review their skills. Some form of recording and reviewing of learning and development is now undertaken by employees in most large and sometimes small companies. Typically larger organisations will expect graduates to have the skills and knowledge to develop and maintain an e-portfolio for CPD and to show evidence that they are regularly updating their skills.

Employers and CPD

- Centre for Recording Achievement
- Employers and CPD case studies
- Additional examples of how CPD is used by employers - University of Leeds

Attitudes to Personal Development Planning

Gareth Edwards in 'Connecting PDP to employer needs and the world of work' has drawn together key findings from major research undertaken by the QAA in 2000 about employer attitudes to PDP. 18 graduate employers and 7 professional and statutory bodies discussed their attitudes towards PDP. Although published in 2005, it provides some key indicators about employers' perceptions of PDP, for example, they are more interested in the process of PDP rather than the 'documented outcomes'. It was felt that by engaging with PDP, learners would be more able to reflect on their experiences (both academic and non-academic) and articulate their skills and knowledge in the recruitment process. Guidance should be provided to learners on key competencies such as:

- flexibility, adaptability and managing change
- self motivation and drive
- analytical ability and decision making
- communication and interpersonal skills
- teamworking

The use of employer feedback to inform PDP tools and processes was an important part of the PDP4XL2 project. The PDP4XL2 project also found that Creative Industry employers seek individuality and personality in job applications, particularly for the large companies, and most are positive that PDP can help the applicant to clarify their goals and express them in this respect. Few employers, however, believe they have time to view applicants' e-portfolios. There was a high value overall attached to the PDP *process* and the concept of e-portfolios as a tool within the learning process

Attitudes to Personal Development Planning

Employers require a professional image to be presented to them, whether a presentation e-portfolio or a blog as part of the e-portfolio process. A work-based mentor, a participant in the HELPP project, makes the point that a professional blog is very different to a personal one - the language used, the presentation, the types of comments that are attached must be carefully considered, *'it's professional so I think the actual words that people use on the blog should be professional, should come across professionally and it should be professional. ...it's got to be different'*. Learners also need to be aware that personal blogs can be read by prospective employers and clients.

Professional Bodies' Perspectives

Many professional bodies are now expecting their members to engage with an outcomes-based approach to CPD and to reflect on their learning in the workplace; they are expecting such reflections are held within an e-portfolio provided by the society and will be used to provide evidence for accreditation or continuing accreditation. Professional bodies such as the Society of Radiographers and the Institute of Physics are providing e-portfolios for their members to record and reflect on their CPD. The Chartered Society of Physiotherapists is currently running an e-portfolio pilot in order to support CPD recording and evidencing and help meet CPD standards more effectively. The Royal College of Nursing offers a CPD template and framework which allows its members to reflect on practice and provide evidence of CPD. The Institute for Learning is introducing the optional use of e-portfolios to support the regulatory requirement for FE practitioners in England to undertake CPD.

Related Links

- Chartered Society of Physiotherapy
- Institute for Learning
- Royal College of Nursing
- Society of Radiographers
- Institute of Physics
- Chartered Management Institute
- myWORLD Project

he Institute for Learning has introduced REfLECT, its e-portfolio to support the regulatory requirement for FE practitioners in England to undertake CPD. The e-portfolio for staff CPD/PDP implemented by Thanet College mirrors REfLECT. Staff comments on using e-portfolios can be found at YouTube.

Findings from Flourish project

Professional Body Contacted	e-Portfolio submission allowed	Restrictions on e-portfolio type	Comments
Royal Pharmaceutical Society of Great Britain	Yes	Only RSPGB tool permittedpermitted	Applicants working in an HE insitution with an e-portfolio not approved have to upkeep 2 e-portfolios
Chartered Society of Physiotherapy	Yes	None	Use of recommended e-portfolio system not compulsory
Nursing and Midwifery Council	Yes	None	Verbal reassurances given that any e-portfolio would be accepted
Certified Member of the Association of Learning Technologies	Yes	None	Variety of methods encouraged. Four applications from the wider Flourish team have been submitted to ALT and CMALT status conferred
Chartered Institute of Library and Information Professionals	Chartered Institute of Library and Information Professionals		CILIP has shown an interest in the Flourish findings
Higher Education Academy (Individual Route)	No		Applicants download a document from HEA website and fill it in

As part of the myWORLD project, the Thames Valley Professional Institutes Partnership (TVPIP) and the Chartered Management Institute (CMI) saw the potential of e-portfolios to support professionals' continuing professional development. Maintaining an e-portfolio would allow members to record their CPD, set targets, and demonstrate how they have applied their skills. The resulting e-portfolio could be used to organise evidence to encourage applications for Chartered Management accreditation, as well for other CVs, job applications or own marketing.

There is an expectation that learners will be familiar with the process of PDP and the production of e-portfolios through their education and that they will be able to move their materials into e-portfolios provided by professional bodies. A 2005 JISC Study into the legal and records management issues relating to the concept of Lifelong Learner Records and e-portfolios offers a perspective from selected professional bodies on this.

"We chose to offer practitioners an electronic route to CPD because it offers some unique advantages - a personal and private space which is entirely under your control and which is easily accessed from home and from the work place."

Dr Jean Kelly, Professional Development Manager, Institute for Learning.
Taken from 'Effective Practice with e-Portfolios' (JISC, 2008)

Institutional Perspectives

e-Portfolios have clear links with learning, teaching and assessment of learning, but benefits also exist for institutions, especially where the vision for e-portfolios is part of a wider strategy to promote lifelong learning, widen participation or to embed learner-centred pedagogies.

From a data management point-of-view, the integration of e-portfolio systems within and across institutions and organisations can also bring significant benefits. Taken from Beetham (2005), these include:

- rationalisation of administrative processes, particularly in the areas of learner records and assessment management
- enhanced provision to individual learners, due to better information about their needs and preferences; personalisation
- enhanced selection processes, due to better information about individuals' achievements
- credibility for learning opportunities and programmes offered, through participation in a recognised framework for recording achievement
- improved organisational research, quality

e-Portfolios: Some Key Benefits for Institutions

- Supporting the admissions process
- Helping learners reflect, to develop their self-awareness and autonomy
- Development of skills as required by institution or professional body
- Presentation of achievements and skills to a third party
- Enhancement of self-confidence, self-esteem and motivation among learners and tutors
- Recruitment
- Widening participation
- Retention
- Collaboration
- Employability
- Alumni - opportunities for long-term relationship

(Source: EELLS Final Report)

assurance and planning through access to richer information about learners

"Any unexpected benefits? Well, yes, I think we would agree that actually using the e-portfolio has given staff the confidence to try other forms of technology, for instance audio files to give feedback to their students or linking their PebblePad blog with their Facebook. So they're beginning to experiment more and feel probably a bit more comfortable with the technology..." Sarah Chesney of the Blossom project at University of Cumbria

Models of implementation

As with any e-learning initiative, moving from small scale pilots and funded projects to wider implementation involves careful management. Some of the key factors that should be considered are identifying what is appropriate and sustainable, aligning curricular practice, managing potential risk factors and preparing for future developments. When it comes to implementation, the most important question to be asked about e-portfolios is not 'What system should we adopt?', but rather 'What do we want to achieve, and who with?' Taking the learners as the starting point remains sound policy, since the needs and requirements of target groups should be the driver behind an initiative.

Approaches to engagement of users by implementation of appropriate tutor/mentor training and student support materials is important. The EPICS-2 project surveyed students from a wide range of undergraduate and taught postgraduate programmes at Newcastle University on their engagement with e-portfolios. Results showed that those with the highest engagement had, in comparison with their less engaged peers, a higher understanding of the purpose of the e-portfolio and how it is used on their programmes as well as a higher reported incidence of references by teaching staff to the e-portfolio. Source: EPICS-2 final report, page 18.

If centrally managed and linked to institution-wide provision, such as tutorial programmes, awareness of an e-portfolio initiative is likely to be greater and take-up more rapid. However, the imposition of a compulsory initiative does not ensure the commitment of practitioners and learners. In contrast, implementation that is demand-led can result in more effective and fruitful outcomes, although these may emerge in a piecemeal rather than a uniform way. Making the e-portfolio system applicable and relevant to different subject disciplines is another aspect of the challenge.

A manager's perspective

At Coventry University, we have been using a freestanding e-portfolio system for three years and are now delivering, assessing and moderating some elements of PDP across the university via this system. We have an established VLE, but that tends to be viewed as an institutional tool, and what is important about PDP is that it should be owned and managed by the individual learner. A separate e-portfolio system seemed the way forward, provided there a single log-in could be provided for both tools.

There were a number of drivers behind the PDP initiative. The QAA launched its Progress File initiative in 2001, establishing the links between reflective learning, action planning, and learner progression. That prompted us to view PDP as a key part of our strategy for improving learner achievement and completion. Some personal and academic tutors also saw value in implementing use of e-portfolios on their courses. There is a diverse range of subject disciplines now doing so, including art and design, physiotherapy, transport and product design, and modern foreign languages.

At Coventry, we believe it is best to operate a light touch model, giving departments scope to embed PDP incrementally into their course modules, although this is likely to be a gradual process which carries a higher risk of failure. A partially devolved system, in which some elements are delivered centrally, gives at least some guarantee of an outcome, especially if the PDP component carries credits. We have identified employability competences as a generic compulsory element for all courses, delivered and assessed centrally. This means that employability competences are a requirement that learners must meet before they can progress onto the next year of the course.

The impact of PDP on retention, achievement and employability is something we urgently need to know more about - it is easier to win hearts and minds of academic staff if a PDP initiative is grounded in research. For learners I believe it also needs to be an assessed part of their course.

Andrew Turner, Principal Lecturer in Education Research and Development, Coventry University
(Taken from JISC 'Effective Practice with e-Portfolios', 2008)

Establishing an e-portfolio culture

Centres for Excellence in Teaching and Learning (CETLs), or in-house staff development units, arguably offer the most sustainable and effective routes to embedding change in culture and practice across an institution, since these foster, rather than insist on innovation. Other steps to embedding an e-portfolio culture include appointing a senior manager champion, developing a peer mentor scheme to support practitioners new to e-portfolio-based learning, providing online support for new users, and emphasising the advantages of e-portfolios to practitioners and learners, focusing, for example, on the potential to develop learners' employability through their reflective writing skills.

Resources

- Flourish project
- ePISTLE Guidelines 5: Use and Non-Use
- ePISTLE Guidelines 3: Transition
- FILE-PASS Case Study and Resources
- Flourish Video Animations
- Blossom YouTube Video
- Blossom Website

e-Portfolio adoption in learning and teaching is likely to increase if practitioners are themselves using reflective e-portfolios for continuing professional development. The Flourish project is exploring how e-portfolios can be used to embed CPD practice in the University of Cumbria's

teaching training programme and support the appraisal process.' WITH 'The Flourish project explored how e-portfolios can be used to embed CPD practice in the University of Cumbria's teacher training programme and support the appraisal process. Blossom, a related project looked at similar practices of using e-portfolios to support staff CPD across the HE sector. A successful small scale project in areas where there is a clearly defined need also helps to create momentum - early adopters can then become mentors to others (ePISTLE Guidelines 5: Use and Non-Use). However, the single most powerful incentive is the commitment of senior managers.

The resource implications of staff development particularly in terms of time and support need to be considered. Tutors are more likely to engage with and be enthusiastic about e-portfolios (Stefani et al, 2007; ePISTLE Guidelines 3: Transition) if protected time is made available to them. Adoption of e-portfolios is likely to develop at different rates across the institution (Barrett 2004). Raising awareness of the potential of an e-portfolio tool as well as pedagogic benefits are factors in adoption, for example, in the FILE-PASS project the tutors did not realise for some time that the e-portfolio could store visual materials. The value of IT support and skills development is further investigated in the Choosing, Implementing and Embedding section of these resources.

Collaboration: the role of a Community of Practice

> *"The overall approach was collaboration, collaboration, collaboration among the regional Universities and FE Colleges, and within these groups among learning technologists, educationalists, administrators, executives, managers."*
>
> (EPICS Final Report p.4)

Collaboration between providers on a regional basis over the delivery of PDP and development of e-portfolios has already been explored in the JISC regional pilot projects. The EPICS project, for example, found that establishing collaboration across the partner institutions was essential for the project to deliver a critical level of uptake of connected services. An outcome of the project was the establishment of a regional PDP/e-portfolio forum and online community of interest in the North East of England to take forward issues in this area and better realise lifelong learning in the region. Similarly, the RIPPLL project has shown great potential for collaboration that exists between technical ICT staff in HEIs and their counterparts in colleges in the same region, focused by the issue of interoperability for student progression. Face-to-face contact and the pooling of expertise proved highly productive in terms of ensuring the success of the project. This cross-institutional model has been expanded by Leap-Ahead, the Derbyshire/Nottinghamshire Lifelong Learning Network.

Networks which foster dialogue, debate and discussion between different practitioners within as well as outside the institution can play an important role in successfully developing and embedding an e-portfolio culture. In the ISLE project, tutors identified the creation of staff networks and discussion fora as a key aspect of e-portfolio implementation. The CAMEL model provides a tried and tested framework for developing a community of practice both within an institution and between different partners.

Data issues and managing technology

Reduction of risks associated with legal issues or academic misconduct is essential in a successful e-portfolio implementation. The first line of defence has to be embedding digital literacy skills into the day-to-day practice of both learners and academic staff. See the Legal Issues section for further guidance in this area.

Resources

- EPICS Case Study and Resources
- RIPPLL Case Study and Resources
- JISC infoNet's CAMEL Model

The technological and information management aspects of implementation are complex and have been explored and highlighted by a range of projects. These cover issues from access, authentication and storage of e-portfolio-related data to interoperability. Pages within the Choosing, Implementing and Embedding section of this infoKit explores these issues in more detail.

Choosing, Implementing and Embedding e-Portfolios

There have been several reasons at a subject discipline level for choosing e-portfolios, but for the implementation to be effectively embedded across your institution, e-portfolios should be included in your institutional strategies. These may be driven by a range of agendas such as widening participation, retention, lifelong learning and employability, as covered in our Policy Drivers and Trends section.

The extent to which e-learning is used and integrated within the institution will impact on how e-portfolios are received. If e-learning is embedded within the institution then an e-portfolio implementation will be more progressive for tutors and learners (Stefani el al 2007).

A Governance Toolkit developed by Newcastle University as part of the EPICS project can help you in developing your strategy, including cross-institutional collaboration. The EPICS site also includes 'use cases' that may help in developing a vision and strategy for e-portfolios implementation. Scenario planning is gaining credibility in the educational sector and can provide a useful tool to develop your strategies.

Resources

- EPICS Governance Toolkit
- Scenario Planning infoKit

The pages within this section cover some of the aspects of selecting tools and systems, implementing and sustaining e-portfolios. The Institutional Perspectives section also looks at different experiences of implementation and embedding e-portfolios.

'e-learning projects aren't just about e, or even just about e-student-learning. At their most effective, they are (in very good ways) highly disruptive. They throw up needs for organisational change; changes to governance; changes in the roles of many staff, and the consequent need for staff development, changes to pedagogy, and hence to the nature and shape and form of courses, and the consequent need for educational development support; changes to the student's 'contract' with their HEI or FEC; even changes to architecture (build another lecture room or more quiet and noisy study spaces, or install wifi everywhere or more servers, or etc?) If they are to deliver maximum effect, e- learning calls and projects must accept and embrace all of these areas of implication, and no doubt others. '

(Comments taken from Dr David Baume, project review of EPICS).

Defining Your Needs

Undertaking an investigation and analysis before choosing your system in order to ensure that your e-portfolio system meets the requirements of stakeholders is an important process in choosing the right e-portfolio tool.

Selecting the wrong product or one that is not appropriate for institution-wide implementation can limit the impact of e-portfolios. In the Kent PLPP project staff were frustrated by using what they perceived to be an untested product which was in a 'relatively raw state'. (Kent PLPP project Appendix F). The type of language used in the system can become a barrier for learners. For example, in the myWORLD project, an e-portfolio implementation based on Sakai 1.5 found that the system was inappropriate because the interface had been developed for undergraduates in the United States. For non-traditional learners, this created a barrier and alienated users.

A multi-disciplinary approach involving all stakeholders is essential to elicit system requirements. This will help ensure a greater level of engagement from users and that use of the system is maximised. Involving learners at this stage can provide a different perspective on the user interface. A clear set of requirements, including the goals for the project and pedagogic model of e-portfolio, will go a long way to a successful implementation. This approach is recommended by the ComPort project which emphasised that 'it was vital to fit the e-portfolio to the needs of the learners and programme'.

It is important that system selection is not viewed as a technical project or a problem but involves pedagogy and organisational considerations as found in the EPICS project: *'It is clear that the main issues were not just technical, but were about pedagogy, organisation and governance.'*

The former DfES (replaced by DIUS and DCSF) in conjunction with Becta and JISC identified the following key features for e-portfolios based on the concept of multi-user and multi-component:

- Users: learners, teachers, employers, examining boards, parents
- Components: learning space, record, plan, CV
- Transactions: planning learning, assessment, admissions
- Features: accessibility, secure, portable
- Requirements: user policy, strategic architectures

The EELLS project listed 5 tools which were the basis of their e-portfolio system:

> *'Users are at the centre of their e-portfolios... and without tight integration with, and concern for their uses and needs, e-portfolios will not be used.'*
>
> ePISTLE project final report (2007)

Further Resources

- System Selection infoKit
- JISC-CETIS: Portfolio requirements
- PDP4Life: Simon Grant 'What kind of items might be managed through e-portfolio systems?'
- Kent PLPP Case Study and Resources
- myWORLD Case Study and Resources
- EPICS Case Study and Resources
- EELLS Case Study and Resources
- Implementation Guidance
- Guidance for Selecting a Tool
- ELP Project
- ComPort Case Study

- File repository: where users can upload, modify and organise documents such as multimedia files, images, photos and files
- Learner records: a non-editable 'transcript' which is downloaded to the e-portfolio from an academic institution's student database
- Showcase and CV builder tools: these allow the user to provide evidence about learning, skills or competencies and to showcase these to a variety of selected audiences
- Personal Development Planning tool: the EELLS project used a PDP framework taken from the Learning Matrix portal
- Course catalogue: this would market courses that were available at the institution(s)

Our Checklist later in this section includes a Technical section for further consideration.

Technologies

Different systems will have been developed for different purposes and those developed primarily to support assessment may be different to those developed to nurture a continuing process of personal development and reflective learning. Whatever the primary steer of the development, the e-portfolio system will usually comprise:

- A 'reflective' tool such as a blog or an online journal
- A tool for the creation, development and maintenance of a web-based, digital online portfolio
- Provision for providing feedback between students and tutors
- An area for the storage of digital artefacts
- Sharing functionality and publishing to the internet
- Diagnostic and competency testing tools

Types of e-Portfolio Tools and Systems

There are a variety of types of e-portfolio tools and systems available:

- self-contained systems, standing apart from other institutional systems (which is how most have been developed)
- components of larger systems, typically VLEs or as one of a set of functional requirements for Learning Platforms
- a set of software tools which have the functionality to support the production of an e-portfolio, a means of drawing together and integrating material from different sources

'e-portfolios are as diverse and unique as the individuals that populate them...'

ePISTLE Project
Guidelines 4: Storage and Access

Within each of these there are different technology options, for example:

- **commercial VLEs** such as WebCT or BlackBoard may have an additional tool that can be purchased and integrated with the VLE i.e. see the Blackboard Portfolio System
- **A stand-alone commercial product** such as PebblePad, FolioLive and iWebFolio
- **An open source product** based on, for example, the Open Source Portfolio

e-Portfolio tools and systems

- Helen Barrett: Types of e-Portfolio Tools (US focus)
- CRA: e-Portfolios pre-19: a survey of what's around (2006)

- **Web 2.0 tools**. Many social networking sites and blogging tools are available on the internet and research shows that these can be incorporated into the learning environment and support active learning. An explanation of social software tools can be found in the JISC infoNet resource 'Social Software' infokit and an example as to how these may be used can be found in the video included in the Learner Perspectives section
- **a self-developed in-house system**. The Open University has developed its e-portfolio and discussed the advantages and disadvantages of such an initiative (link to video at RSC event by Open University)

There can be advantages and disadvantages to any option, for example using a single e-portfolio package may require the end users to adapt their educational paradigm to that of the software developer's. The JISC Distributed e-Learning Regional Pilots Programme demonstrated that a simple, single software solution was inappropriate due to the diversity of approaches to e-portfolios and the wide range of learner needs. Other JISC projects have shown that to support learning effectively e-portfolio systems should be able to accommodate the differing pedagogic models and curriculum approaches of each programme.

An alternative to implementing a single e-portfolio system is to use aggregated web services which are integrated with a user interface. A number of projects have been working to develop web services for e-portfolios including MANSLE. In this project, individual web services were used to support the learner when undertaking personal development planning and portfolio development. Initially existing functional web services, including those from existing JISC projects such as HORUS, were re-purposed, conforming to interoperability standards and then integrated with a user interface to form a new tool. The MANSLE project demonstrated that this approach supports rapid implementation to meet diverse curriculum requirements.

Implementing an e-portfolio as part of a portal is a further option. The Kent Personal Learning Portal Pilot (PLPP) implemented PETAL as part of uPortal. In this case learners would log in to the Portal and then have access to a wide range of support materials about academic study skills including plagiarism, referencing, citing, ICT skills, writing skills for the academic environment as well as the e-portfolio. The PLPP project has developed a schematic overview of how these materials are linked together and to the e-portfolio tool.

Web Services and Portals

- MANSLE Case Study and Resources
- Kent PLPP Schematic Overview
- Kent PLPP Presentation [Powerpoint]

Open Source e-Portfolios

JISC projects such as ePet and PETAL have explored the use of open source software, such as OSP (Open Source Portfolio), as the basis for an e-portfolio system. Some of these, such as ePET, were originally developed to meet the needs of a specific subject such as medicine but JISC has funded them to be extended for more generic use; for example as part of the EPICS-2 project, blogs and elements of social networking were incorporated, together with integrated support for evidencing structured outcomes.. ePET's website shows the core elements of the system and then additional functionality that can be added according to the specific subject needs.

Although open source software provides many technical options, several projects, for example FILE-PASS, have found that the financial advantages of using open source products will need to be counterbalanced with additional technical support supplied by the institution (see appendix B of their Final Report). In addition, it is vital that there is a strong and active community to help support the implementation of an open source product; the Kent PLPP project used an offshoot of OSP (PETAL) and their implementation was hindered by the limited support available to assist in their technical implementation of this tool.

Open Source Resources

- ePet website
- PETAL
- PETAL screenshots
- Open Source Portfolio Initiative
- FILE-PASS Reports
- myWORLD Case Study and Resources
- Elgg
- Helpp Case Study
- Mahara open source e-portfolios
- 'How to Use' ELGG Guides from HELPP project Tutor Employer

The 'PETAL 2' project myWORLD has now moved on from OSP and is using Sakai, which subsumed the OSP product. Another open source product is Elgg; this allows learners to create a public or private blog, upload files and share these with the community. The Helpp project is using Elgg to provide support for students on placement.

Web 2.0 tools

Many social networking sites and blogging tools are available on the internet and research shows that these can be incorporated into the learning environment and support active learning. Students may be more receptive to tools such as Bebo and MySpace because they use them in their day to day lives. For example, students at Dartington College use Blogger and MySpace as part of their informal PDP (see presentation).

Web 2.0 Resources

- CRA report: 'Developing and Implementing a Methodology for Reviewing e-Portfolio Products'
- Social Software infoKit
- Technical Checklist

Cotterill et al (2007) consider if this means that institutions no longer need to purchase e-portfolio systems. It is argued that there is still a need for some level of structure in most learning contexts and hence a requirement for specialist e-portfolio software:

'Intrinsic structure in an e-portfolio may be useful to provide 'scaffolding' to support learning pedagogy or meet requirements for assessment. Skill sets, objectives, outcomes and competencies are by definition structured and can be explicitly supported in e-portfolio. Structure is also important in the transfer of portfolio data using recognised interoperability standards such as IMS LIP, IMS e-portfolio, Europass-CV & HR-XML). These standards, which support structured data, are becoming increasingly important for job/course applications and supporting continuity in lifelong learning.'

It is this structuring that differentiates Web 2.0 tools and an e-portfolio system. So in the Helpp project, although a blogging tool is used for reflection, structured feedback and guidance are provided by tutors. A learning contract has also been deployed within the blog tool to guide students on their learning outcomes for the placement; this is discussed in a video from the Helpp project. The way forward may be to incorporate some of the social networking tools into e-portfolio systems and in some cases to provide a direct link, for example, to Flickr.

Web 2.0 tools can also eliminate some of the cumbersome elements of web services applications. The MANSLE project developed a plug-in around the Flock web browser in order to create more lightweight e-portfolio 'widgets'. This helped eliminate some of the technical weightiness that surrounded the original web services application such as the XML structure of the portfolio. As a result, the Flock MANSLE plug-in (which also works with Firefox) produces a persistent free-format editor which allows the aggregation of photos, text, etc by dragging and dropping from the surrounding web environment. Data is stored on the central MANSLE service using the same mechanism as with the original application.

Customisation

> *'Customisability is key issue. Once students can change the colour of the background, it becomes theirs. It would help them feel like true artists. In this course they are treated like artists.'*
>
> Andrew Kingham, Access to Art course co-ordinator, myWORLD project

As the personalisation of learning is becoming an increasing trend (see Policy Drivers and Trends), the ability for learners to customise and configure their e-portfolios is a key to creating a sense of ownership of the end product as several JISC projects have found. In the FILE-PASS project the opportunity to customise the e-portfolio was felt to be important as this helps learners to engage with and perceive the system to be more 'learner-centred' than a VLE.

Learners on the Access to Art course at the University of Brighton, a partner in the myWORLD project, enjoyed the e-portfolio sessions but if they were to use the system without assistance would require a simple user interface that used a system of easily recognisable and colour coded symbols.

The examples given by the myWORLD project are not advanced technology features but those that most software allow such as customisable font size and colour, formatting of headings to improve structure, use of personal screensavers, background desktop images and file and folder names.

Other JISC projects have found that an e-portfolio system that has few features provides a barrier to usage and continued usage. Learners actively seeking employment were concerned that the presentation of their portfolio should say something about them, get them noticed by prospective employers and make them stand out from other candidates; personalising an e-portfolio is important in this respect.

Learners' response to systems will differ, for example, in the ePISTLE project, younger users liked a more animated interaction which

Further Resources

- FILE-PASS Case Study and Resources
- myWORLD Case Study and Resources
- ePISTLE Case Study and Resources

> *'Some students found the more traditional interface of one e-portfolio 'boring' and indicated that for use for them would depend on whether the appearance of the interface was attractive...'*
>
> ePISTLE Guidelines 5: Use and Non-Use

emphasised fun whilst older users found this more time-consuming. In contrast, in the FILE-PASS project mature students seem to engage more readily whilst younger students needed an interface that they perceived to be attractive before interacting with the system.

One of the disadvantages of customisation is that it may lead to accessibility issues for both learners and tutors (Curyer et al 2007). Accessibility is discussed in more detail in the Choosing, Implementing and Embedding section.

IT Skills

Learners and tutors need an appropriate level of IT skills to fully engage with the e-portfolio. From the FILE-PASS project and student response to systems in the ISLE project, it emerged that this should not be underestimated. In some cases some of the learners in the FILE-PASS and in the Kent PLPP projects were reluctant to engage with the e-portfolio because they had poor IT skills. A programme of IT skills development for tutors and learners (Stefani et al 2007, ePISTLE: executive summary and lesson plans) could include:

- computer basics - creating, saving and uploading files to a network area as well as updates on using basic packages such as word-processing and PowerPoint
- multimedia - creating presentations with audio and videos
- computer graphics - how to use computer graphics programs

Resources

- UKCLE e-Portfolio project
- FILE-PASS Case Study
- myWORLD Case Study
- ePISTLE Case Study
- Kent PLPP Case Study
- HELLO Project
- WoLF Case Study

'The tool should be timed so that it is introduced when the learners need it - allowing time for familiarisation and addressing of any IT skills issues'

Quote from ComPort Case Study

Learners will need to be introduced to the e-portfolio system and then have access to a range of support channels. In the UK Centre for Legal Education (UKCLE) e-portfolio project, learners requested more training in the e-portfolio system. The myWORLD, Kent PLPP and ePISTLE projects recommended that any new software must be available at the start of the course if learners are to be encouraged to use it from the beginning without it feeling like an additional workload and to ensure that it is perceived as genuinely part of their learning journey at the institution. The Comport project reported on a situation where the e-portfolio was introduced late and without being fully-tested which led to ongoing problems and delays and consequently user negativity on the whole experience. Some projects have indicated that e-portfolio engagement may provide a springboard for learners to develop their IT skills and demonstrate these (Amber & Czech 2002).

Learners will need to be introduced to the e-portfolio system and then have access to a range of support channels. One such support channel was provided in the WOLF project in the shape of a Technical Help Forum to support learners in the use of the technology. This facility was then replicated across the HE provision of the HELLO project.

Legal Issues

Charlesworth & Home (2004, 2005 & 2006) from Bristol University raise the following legal issues regarding e-portfolio systems:

- How will you ensure that your e-portfolio system adheres to data protection legislation?
- What are the issues regarding ownership and intellectual property rights (IPR) of materials in your e-portfolio system?
- How will you know that your e-portfolio system is accessible by all learners?
- How will you protect your institution from misuse of the e-portfolio system by learners?
- How will you detect and guard against plagiarism?

Charlesworth presented at a Regional Support Centre and discussed all of these issues.

> 'The legal issues that are likely to affect your institutional e-portfolio system will vary depending [on] a range of variables, for example, the developmental process that produced your system, the nature of the data it is envisaged will be stored in that system, the range of people who it is envisaged will have access to the data, and the means by which learners may make the data in their e-portfolio available to others'
>
> (Charlesworth & Home 2004, p.1).

Data Protection

Any personal data in the e-portfolio system should be held in accordance with the Data Protection Act. Charlesworth and Home (2004, 2005 & 2006) emphasise the importance of data controllers adhering to the Data Protection Act (DPA) 1998 when processing personal data which is typically transferred from an institutional student database system to the e-portfolio system. They state that it is important that an institution includes the e-portfolio system when outlining the purpose of an institution's processing of personal data to the Information Commission. This should specify any changes to the e-portfolio system which may impact on Data Protection.

Resources

- Data Protection Act
- EELLS Reports
- FILE-PASS Reports

They also emphasise the adherence to the DPA of multiple data controllers in multi-institutional systems where personal data may be transferred between institutional systems or to third parties such as work experience providers. Institutions need to make clear to learners about who does and who does not have access to their data in the e-portfolio system. In the case of the EELLs project, because student data was being transferred outwith the institution to another e-portfolio system, the learners participating in the study were asked to sign a data consent form outlining the data protection policy for the EELLS e-portfolio. In other JISC projects such as FILE-PASS, institutions have provided tutor access to learners' e-portfolios; this should be made clear to the learners when they are introduced to the system.

No system can be guaranteed to be 100% secure so users should be made aware of the potential issues in holding certain materials on their e-portfolios such as:

- 'medical records: it is important for the individual's sake that these are not tampered with, and their use and privacy has been a matter of concern and debate for many years

- government records, nationally and locally, including:
    - criminal and police records
    - tax, contribution, benefit and welfare records
    - nationality, residency and passport records
- financial records: banks and similar institutions have always kept these carefully, and they may bear on criminal and tax matters.'
  (after Ward et al 2004).

Data Misuse

Charlesworth & Home (2004 & 2006) state that many learners are unaware of the potential liability they, and the institution, may be under with regard to issues such as defamation, breach of copyright, obscenity and indecency when publishing their materials to the web. It is important to have appropriate procedures and training in place for dealing with these issues. Downes (2004) states there is an element of risk as blogging may begin as a piece of personal publishing but inevitably results in a conversation which must remain unconstrained. However, the risk in the controversial nature of blogging has been known to contravene legislation; Downes (2004) cites a case where legal action was taken against a university resulting from a student's posting about a fellow student and a teacher.

Further Reading

- 'Online PDP and Data Protection' (CRA Newsletter)
- ePISTLE Implementation Overview and Sample Lesson Plans
- Risk Management infoKit

Institutions should consider publishing guidance to learners (and to staff) concerning publishing on the web using institutional resources. Rules and sanctions need to cover such issues as inappropriate material, breach of copyright and breaches of IPR. Examples of this are available at the University of Warwick and on the front page of the FILE-PASS website. In the ePISTLE project, before being introduced to the system, school learners were reminded of the code of conduct of using an e-portfolio system.

It is recommended that a risk assessment exercise regarding this area should be carried out; information on how to go about this can be found in our Risk Management infoKit.

Plagiarism

Due to its very personal nature, the e-portfolio may minimise the potential for collusion and plagiarism. Baume (2003) (whilst referring to paper-based portfolios) states that a portfolio should allow each student to focus on their own particular interest and therefore reduce the possibility of plagiarism. However, when discussing the use of an e-portfolio for entry into higher education, admissions tutors in the ePISTLE Project were concerned about issues of plagiarism and considered the use of a plagiarism detection tool or filter similar to TurnitinUK to help highlight potential risks in e-portfolios.

Further Reading

- TurnitinUK
- ePISTLE Case Study
- JISC Plagiarism Advisory Service

In Aschermann's (1999) study, learners were concerned about their materials being plagiarised because their e-portfolios were publicly available; other learners could use their private materials and this might help them with job applications. DiBiase (2002) expresses concern about 'cyber-plagiarism' because it appears that by publishing learner

work on the web, this could lead to more plagiarism. Another consideration is that of 'double counting' or self-plagiarism. It is good practice for learners to reference their own work.

The JISC Plagiarism Advisory Service gives guidance and information on plagiarism prevention and detection.

Ownership and Intellectual Property Rights (IPR)

Learners maintain ownership and intellectual property rights (IPR) of their materials held in the e-portfolio system, especially if these materials are used for course work or for assessment. The institution does not own the IPR of content in an e-portfolio simply because it was created whilst studying at the institution (see ePISTLE Guidelines 4: Storage and Access).

Resources

- ePISTLE Guidelines
- UKCLE project

In the ePISTLE project users were most concerned about what would happen to their work once they had moved on from the institution in which it had been created. An institutional policy on removal and long-term storage/access of learner artefacts in the e-portfolio is required to address this issue. This is discussed in more detail in the technical section of this infoKit. This will impact on their engagement with the tool and was particularly important for older learners in FE rather than amongst school age users (see ePISTLE Guidelines 3: Transition).

Further issues are created when learners import artefacts to provide examples of evidence when they have been on placement or working for an employer. The employer, in the case of a law firm, would consider that they have IPR over the materials and therefore they could not be uploaded to the learner's individual e-portfolio as highlighted by the UKCLE project.

Charlesworth and Home (2005) state that it is a misnomer to refer to the e-portfolio system as being 'owned' by the learner. Many institutions are referring to the e-portfolio system in this way to emphasise that the tool is to be learner-centred but legally this would not be the case. They suggest referring to the hosting of the learner's e-portfolio material in the system as taking a 'stewardship' role of the materials which is defined as 'the assumption of responsibility for the proper management of learner data' (Charlesworth and Home 2005, p3).

Interoperability

A key factor in the success of e-portfolios in supporting lifelong learning is that data contained within them is transferable to enable learners to access and develop their e-portfolios as they move between educational contexts and employment. Interoperability standards and specifications can help to enable this so that data can be transferred between an e-portfolio system and an institutional or organisational system (e.g. VLE, student record system, employer system) or between e-portfolio systems. However, these standards are still evolving and a number of JISC projects such as EELLS and EPICS have tested different specifications with varying success and are informing further development work in this area.

'Interoperability standards are obvious enablers to e-portfolio transition and progression, all the more so since there is wide acknowledgement that a 'one size fits all' approach to e-portfolios is inappropriate for the diversity of institutions in the school and FE College sector.'

ePISTLE Guidelines 3: Transition

Interoperability Specifications

Since 2001, when the first version of the IMS Learner Information Package (LIP) specification was published, several JISC projects have experimented with limited exchange of some e-portfolio information between different systems. This has not yet extended to implementing the possibility to transfer full e-portfolio information belonging to learners between institutions. Many problems have been found with IMS LIP. In 2005, the IMS ePortfolio specification was published which built several missing features on top of IMS LIP. Around the same time, the BSI commissioned a UK version of IMS LIP, UKLeaP which developed in parallel with IMS ePortfolio. However, it too was closely tied to IMS LIP, and has subsequently been abandoned.

e-Portfolio Specifications

- Portfolio Interoperability Prototyping
- LEAP 2.0
- IMS ePortfolio
- IMS LIP
- HR-XML

Together, IMS ePortfolio and UKLeaP have given a good idea of the kind of information which practitioners and developers think would be useful to be able to communicate for e-portfolio interoperability. This covers digital artefacts themselves - things learners have written or created - together with a structured representation of, for example, the kind of information that is given in CVs and application forms (useful for application and transition), as well as the information that is generated and used in the context of supporting PDP or CPD. IMS ePortfolio added structures for 'presentation' and 'view', covering the use of e-portfolios as presentations. The ISLE project offers a number of potential scenarios where transfer of e-portfolios materials would be required, for example, between institutions and between institutions and employers. Assessment is the only area of e-portfolio use which these specifications do not cover so well as the information required is tightly focused around specific sets of skills, abilities, or competences, and the certification of learners' attainment of them.

However, the growing consensus of opinion within JISC-CETIS and elsewhere has been that IMS ePortfolio is too complex, and not straightforward enough, to expect any large-scale implementation and uptake. IMS may carry out minor revisions on IMS ePortfolio later in 2008, but no major revision is currently scheduled.

Meanwhile, the HR-XML consortium has been continually developing specifications for the exchange of human resources-related data, and this overlaps significantly with e-portfolio information. During 2008 it is being developed from HR-XML 2.5, which is also a very complex set of specifications, to HR-XML 3.0, which will not be backwards-compatible with HR-XML 2.5, but will introduce a degree of rationalisation and modularisation.

In December 2006, the Portfolio SIG initiated the idea of LEAP 2.0, which would take up the development of a much simpler and more practical UK-originated specification. Alongside LEAP 2.0, in 2008 JISC funded a Portfolio Interoperability Prototyping project (PIOP), which prototyped what the developers felt was a much more straightforward and practical XML specification, based on the Atom Syndication Format. This is providing the main (but not necessarily the only) XML 'binding' of LEAP 2.0, simultaneously providing a solid basis for LEAP 2.0 in development practice, and drawing from the larger set of concepts that are still being brought together in LEAP 2.0 to underpin further development.

Several developers, involved with a number of JISC projects, have already participated in the PIOP work, and at the time of writing it is hoped that more will do so over coming months, to extend the capacity for interoperability across more e-portfolio tools that are currently in use.

It is always worth keeping in mind that effective interoperability between e-portfolio tools and systems depends vitally on identifying correspondences between the e-portfolio practice of the various institutions, and ensuring that what corresponds in practice is represented in compatible ways when the relevant information is given in the format used by the interoperability specifications. A mere conformance to a technical specification will never, by itself, ensure that e-portfolio information generated in one institution is able to be reused in practice in another context or in another institution.

Even if the transfer of information is not possible in certain situations, as a minimum, learners should be able to download their materials from the e-portfolio system to a portable storage device such as a memory stick. In the Kent PLPP project, a system was developed using PETAL for learners to extract their materials from their e-portfolio. The Helpp project helped learners to be able to download selected materials from their 'Elgg e-portfolio' area such as files and blog entries as a zip file to portable media such as memory sticks and DVDs and then access through an HTML file; this is outlined in their presentation to the JISC CETIS Portfolio Special Interest Group.

Linking to the institutional VLE

Whether you are purchasing a stand-alone commercial product or implementing an in-house solution, it is essential that the product complies with standards to enable interoperability with your institutional VLE.

Learners will also need clarification about how the VLE relates to the e-portfolio and why they are using the e-portfolio system as well as the VLE. For example, in the FILE-PASS project, learners had the expectation that they would have to use the VLE and were confused when introduced to the e-portfolio system especially regarding the e-portfolio system's role in their learning.

Linking mobile computing

Cotterill et al. (2006) and others at the 2006 EiFEL e-portfolio Conference, showed the possibility of linking mobile devices with e-

Projects and Resources

- ISLE Case Study
- EELLS Case Study
- EPICS Case Study
- Kent PLPP Case Study
- Helpp presentation
- FILE-PASS Case Study
- Mobile devices and e-Portfolios
- HELPP Case Study
- LEAP-2A Case Study

Projects and Resources

- WoLF Literature Review
- WoLF - Examples of Mobile Technology
- WoLF Case Study

portfolios. Learners are very comfortable with mobile devices and will expect, very shortly, that they can link these with their e-portfolio (Stefani et al. 2007).

The WOLF project explored how mobile devices such as Pocket PCs can be used by teaching assistants to record and reflect on experiences in the classroom. The devices were synchronised with the College's Moodle VLE. The WOLF website provides a wealth of resources including project reports and presentations about the technical issues of deploying the PocketPCs, an ongoing literature review about PDAs and mobile learning and the pedagogy of mobile learning, and resources for practitioners.

Access, Authentication and Storage

Access

Learners will require sufficient and timely access to appropriate computer equipment and the internet. Easy access is essential to ensure learner use and engagement with the e-portfolio; in the ISLE and FILE-PASS projects e-portfolio implementation was limited because not all learners had ready and reliable access to computers with network access. In the ePISTLE project learners stressed that they needed reliable and ready access to computers so that their e-portfolio building could be 'iterative, incremental and timely'. In the Kent PLPP project, systems had not been optimised to the correct monitor resolution and this delayed the project and its impact.

Case Studies and Resources

- ISLE Case Study
- FILE-PASS Case Study
- ePISTLE Case Study
- Kent PLPP Case Study
- MANSLE Case Study
- University of Utrecht Presentation

Although it is generally accepted that an e-portfolio is web-based, this can cause issues for learners. For example, those working in the NHS who wish to record experiences and data but may not have ready access to a computer or to a computer that can access the internet. The MANSLE project found that an e-portfolio which always required web access was not appropriate for some learners. Therefore a client application was proposed in the first phase of the project which could be installed on a computer, updated and synchronised when possible.

> *'Student evaluation of their experience indicated that access to a version of the tool which they could update locally and then synchronise with the remote server would provide a useful and more usable approach than the network-connected version piloted.'*
>
> MANSLE Final Report p.20

It is not always possible to provide this functionality but tutors and learners need to be aware that in some cases, computer access may be restricted and that this should be accommodated in the implementation of the e-portfolio. For example in the case of the implementation of the e-portfolio at Utrecht University technical issues with access led to learner and tutors abandoning the e-portfolio and returning to email and Word documents.

Authentication

JISC projects are exploring user authentication for e-portfolio systems and associated e-resources. A number of options are available but Shibboleth, a relatively new and complex system has been trialled by a number of projects. In the Kent PLPP project a number of different possibilities for authentication were considered when implementing an e-portfolio within a portal; it was found that Shibboleth although considerably more complex and requiring higher set-up costs was in the long-term more cost effective since the incremental costs would stay relatively constant.

Shibboleth seeks to facilitate the exchange of data between institutions and their partners and is an open, standards-based solution which is led by Internet2, a consortium led by universities working in partnership with industry and government to develop and deploy advanced network applications and technologies. It determines if a user has the appropriate permissions to access a resource. Critically it focuses on whether the user has the necessary permissions rather than identifying the user.

Initial implementations have raised a number of concerns such as the level of technical knowledge required and the technical infrastructure to support Shibboleth. For example, in the ePISTLE project, the Shibboleth authentication and authorisation caused problems with a participating school because of an issue with its internet connection. This led to packet drops and rendered the e-portfolio inaccessible to learners (see Guidelines 4). As projects and institutions become more familiar with Shibboleth, more guidance will emerge and will be available on the JISC website.

Authentication Resources

- Introduction to Shibboleth
- Internet2
- JISC: Access Management and Shibboleth
- Kent PLPP Appendix C
- Kent PLPP Presentation
- Learning Matrix Final Report
- EPICS Final Report
- ePISTLE Guidelines

For the moment, if it is not possible for institutions to implement Shibboleth, then as a minimum, single sign-on for e-portfolios using, for example, LDAP should be implemented within institutional frameworks as found in the ePISTLE Project (see Guidelines 4).

Storage

'Storage will inevitably need to be considered in terms of duration from various viewpoints. This is reasonably straightforward while the owner of the e-portfolio is registered with, studying at, or working for the organisation hosting the e-portfolio. After they leave the question of how long the hosting arrangement should continue will depend on a variety of factors.'

ePISTLE Guidelines 3: Transition

During the early stages of the e-portfolio implementation, storage requirements for the system will be difficult to predict. Learners will want to store many different types of assets - from Word documents to multimedia presentations. These can be used to evidence learning within and across modules or learning outcomes and so assist learners to integrate their learning or take a holistic view of their learning. This will have storage space implications - sufficient space needs to be allocated so that learners do not become frustrated with a restricting system. It may be appropriate to store large files (video and audio) external to the e-portfolio. Also, institutions may wish to prevent the upload to the e-portfolio of executable and similar files.

Resources relating to Storage

- Kent PLPP Final Report
- Developing e-portfolios for VET: Policy issues and interoperability
- ePISTLE Guidelines

In the Kent PLPP project, users were provided with 100MB of storage. Cruyer et al's 2007 report, *'Developing e-portfolios for Vocational Education and Training (VET): Policy issues and interoperability'*, indicates that Australian HEIs provide between 3MB and 512MB of space.

Cambridge's research at Minnesota indicates there are three stages in learner development and use of e-portfolios that may provide some help when planning storage requirements:

- experimentation - in this stage, the user will explore how to represent their learning and performance
- living document - at this stage, the learner has an e-portfolio which they perceive to be valuable and will not change its structure significantly. Updates are made on a regular basis
- archived - when no longer useful

After leaving your institution, learners may wish to continue to maintain and develop their e-portfolio in your system. Learner motivation for e-portfolios is linked strongly to the ongoing access and storage of e-portfolio after leaving an educational institution (Aschermann 1999). If learners cannot utilise all the work that they have created after graduation then there is less incentive to use an e-portfolio. Learners will also be anxious about what has happened to work after they have left an institution (see ePISTLE Guidelines 2). You should consider developing a plan for the storage and ongoing storage of this work and the provision of appropriate resourcing after the learner has finished studying at your institution. One model may be to provide graduates with access to the system for 12 months and then make it available via subscription to an alumni service. This would help finance the service and provide a link for your institution to your alumni. A read-only option could also be made available for a longer period of time. This will be an important issue when e-portfolios are part of the admissions process and subject to verification checking, for example, one institution checking the validity of an e-portfolio. Further information is provided in ePISTLE's Guidelines 4.

Accessibility

All institutions need to show that they are making reasonable adjustments to comply with the Disability Discrimination Bill 2005 and the Special Education Needs and Disability Act 2001 (SENDA). It is worthwhile noting that there was a very varied response to the question referring to accessibility in the Strivens' study with a 'high awareness of the importance of accessibility but with only moderate practice' (Strivens 2007, p.15). Her survey identified that some institutions were dependent on commercial suppliers to address this issue whilst others were more proactive having tested their systems with screen readers such as JAWS.

Learners on the Access to Art course at the University of Brighton, a partner in the myWORLD project, enjoyed the e-portfolio sessions but if they were to use the system without assistance would require a simple user interface that used a system of easily recognisable and colour coded symbols. In the FILE-PASS project there was a mixed response to using additional reader software such as JAWS and Supernova with OSPI. See Appendix B of the FILE-PASS resources and the Kent PLPP Case Study for

"...we've got dyslexic students who were, at first, very wary of that format and we also had a student with a significant visual impairment... initial concerns didn't follow through, our dyslexic students are actually blogging very will each other and they're engaging really well with it. (For) our student with visualimpairment we were able to set up zoom text and things like that that support facilities on a computer for him so he was able to access it"

Health and Science Tutor, HELPP Project

Resources and Links

- What is SENDA?
- JAWS website
- FILE-PASS Appendix B
- Kent PLPP Case Study

Key Services

- JISC TechDis
- JISC-CETIS

more information.

It is essential when working with a software supplier, or developing a system, that accessibility is not left until the final stages of development (link to video of OU presentation at RSC event at QMU). JISC TechDis provides information about accessibility and e-portfolios whilst JISC-CETIS (the Centre for Educational Technology and Interoperability Standards) provides general guidance on accessibility in e-learning.

Technical Support

> *'Due to the nature of flexible lifelong learning and the recording of both informal learning and life experiences, e-portfolio may place a higher demand on access than other institutionally based systems. Ideally institutions need to ensure 24/7 access and develop strategies that can recover service quickly should systems become unavailable outside of the traditional 9-5 Monday to Friday window.'*
>
> ePISTLE Guidelines 4

Technical support is important to ensure a smooth deployment and continued maintenance of the e-portfolio system. This means that the e-portfolio must be included in the disaster recovery procedures of an institution from the beginning (ePISTLE Guidelines on Storage and Access). Such technical support will need to be in place for all institutions using the e-portfolio including partners. In the ELP Project, changes to firewalls at one participating school presented some difficulties. This was resolved to some extent largely through good communication between the school coordinator and the project team showing how important this is in helping to minimise user frustrations. A wide range of issues arose for learners during the ISLE project during the technical deployment of the e-portfolio system, and a high level of support was needed to overcome these. However, in most cases technical issues have tended to arise during the early stages of deployment although ironing out technical problems from the outset is critical to user engagement as the system may be considered difficult to use or unreliable if these are unresolved.

Further Resources

- ePISTLE Case Study
- ePISTLE Guidelines 4: Storage and Access
- ELP Case Study
- ISLE Case Study

Implementing

You will have to consider ongoing resourcing of any IT implementation, and e-portfolios are no different. You will need appropriate resourcing to ensure that there is:

- sufficient learner access to computer equipment and the internet
- adequate technical support to ensure a smooth deployment and continued maintenance of the system
- ongoing storage of the e-portfolio - you should consider providing a plan for the storage and ongoing storage of this work and appropriate resourcing after the learner has finished

Resources

- System Implementation infoKit
- ePISTLE Reports and Guidelines
- ISLE Case Study
- FILE-PASS Case Study
- MANSLE Case Study

studying at the institution

- integration with institutional frameworks for authentication such as LDAP to facilitate single sign
- technical support for learners and staff as appropriate to their level of IT skills

Tutors will need to develop new skills to support e-portfolio implementation and so resources will also need to be made available for adequate levels of tutor development, together with recognition for development and the time involved. This includes time to attend staff development events and to prepare integrating the e-portfolio into the curriculum. If protected time is made available for tutors, they are more likely to engage with and be enthusiastic about the e-portfolios (Stefani et al, 2007; ePISTLE Guidelines 3). Also tutors need time to think about how to implement the e-portfolio so that it does not become a glorified online CV and digital archive of assessments but planned so that it is fully integrated into the curriculum (ePISTLE final report).

Within the Blossom project there were different techniques employed to encourage staff commitment:

- running workshops and summer schools
- actively encouraging all members of staff to use the e-portfolio system to support the appraisal process
- e-learning retreat at a special location off campus where teams of staff can actually experiment with using the e-portfolio and support one another at a two day event
- small amounts of funding to people who want to use the e-portfolio for areas away from the key areas identified within a project
- gaining their interest in one aspect of the e-portfolio and then gradually introducing more functionality
- supporting staff during the e-portfolio introduction to learners
- seeing high quality examples of learners' e-portfolios
- use existing marketing, for example, committee meetings, internal website, team meetings
- Introduce to new staff at induction sessions

Early adopters and enthusiasts will need to be encouraged to promote that practice and e-mentorship training is recommended (ePISTLE Guidelines 5). Recognition should be given to the different attitudes of staff and to the fact that staff members will develop at varying rates (Barrett 2004). Projects such as ISLE, FILE-PASS and MANSLE indicate that it takes a significant amount of time for tutors to realise the potential of e-portfolios; for example in the FILE-PASS project the tutors did not realise for some time that the e-portfolio could store visual materials for tutors. Ironically the tutors had been complaining that the tool was too text-based.

As with any change it is useful to reflect on **enablers** and **inhibitors**.

Enablers

Based on, and developed from, a Senior Management-approved 'policy' statement - a useful and often crucial reference point in managing development

- Senior management "buy in" and the direct support of a PVC as 'champion'
- Leverage provided by external funding - lending credibility as well as financial support
- Inclusive and broad-based working and development group - including academic and 'support' staff
- Dedicated staff appointments to manage the development - central university level focus for co-ordination
- Parallel and significant curriculum developments - Foundation Degrees did much to re-energise and focus development; Progress File and more recently HEAR (Higher Education Achievement Record) proposals provided an overarching context

Inhibitors

Taken from Betts and Calabro (2005):

- Staff resistance to change, which is seen as a threat to traditional or established values and HE culture
- Issues of professional identity for academic staff
- Staff concerns about ability to support new process-led teaching inputs such as PDP and work experience modules
- Organisational structures and culture which make implementation of corporate level approach difficult
- Difficulties of establishing local ownership of a policy driven initiative.

Resources

- Change Management infoKit
- Force Field Analysis

However a clear strategy coupled with a staff development plan will prove to be vital enablers in your implementation.

Phased implementation

An institutional implementation should start small and gradually develop experience (Barrett 2004a). In the early stages, it is recommended that clear boundaries are set regarding a phased implementation; inevitably this will require some compromises to be made. If senior management are seen to be committed to the use of the e-portfolio process and invest in staff development then staff are more likely to become involved.

Module, course and institution implementation

The e-portfolio can be implemented at three levels: module, course or institution. Stefani et al (2007) outlines how these can be implemented - page 11 of the book has an excellent table.

We recommend that you consider a phased implementation of your e-portfolio system, perhaps with a few small pilots in the early stages. The pilots could be within a module or across a subject discipline and for success it is important that the e-portfolio is embedded into the curriculum rather being seen as an 'add-on'. This aspect could be a major concern to some tutors who view teaching and research within their subject discipline as their main focus and not education in the broader sense. e-Portfolios present a challenge to this group and you should not underestimate the time required for this change. In colleges and many universities, subject tutors also act as personal tutors and it is this group that will more readily embrace e-portfolio implementation.

A word of caution about terminology: a 'pilot' can ring alarm bells with early adopters as it suggests that the pilot may not continue and the institution move to using a different product or technology.

e-Portfolios Checklist

Institutional Checklist

Here are some issues that institutions may like to consider when implementing an e-portfolio *(based on the work of Lorenzo and Ittelson and Stefani et al)*:

Considerations for tutors

- What is the purpose of the e-portfolio for learners? Who is going to explain this to the learner and when?
- How prescriptive will tutors be regarding the use of the e-portfolio and regarding the artefacts used by learners?
- What effect will it have on the curriculum?
- What programme re-design, and possibly re-validation, will be required?
- What aspects of the e-portfolio will be assessed and at which levels: module, programme or institutional?
- Will the e-portfolio be integrated within programmes or an additional optional activity?
- Will it be mandatory?

Legal considerations

- Who owns the e-portfolio? (see Ownership and IPR section plus IPR considerations under the Technical Checklist)
- What data will be added to the e-portfolio by the institution eg from student database? Who will be responsible for this? (see legal issues)
- What advice will learners be given about what files not to upload into an e-portfolio?

Development and support considerations

- Who will be providing staff support and development? Have tutors been consulted about the type of development they would like? The ePISTLE project found that tutors had very different attitudes to e-portfolio especially related to how they valued reflection in learning
- What are the roles of tutors and what are the roles of support staff, for example, careers advisors for the e-portfolio implementation? e-portfolios cannot be deployed in isolation - learners need extensive guidance on how and why to use them
- Who will show learners how to use the system? Will there be an institutional programme or will it remain the responsibility of the tutor? In their Guidelines 3, the ePISTLE project emphasised that guidance for learners was essential

Technical Checklist

A number of technical issues should be considered when planning the implementation *(these are based on the EELLS project and also draw on the work of Lorenzo and Ittelson and Stefan et al)*:

Hardware and software considerations

> *'A key issue is that technology must be fit for purpose'*
>
> From 'Lessons Learned', ComPort Case Study

- Integration - how will the issues of integrating an institutional MIS and/or the VLE with the e-portfolio be dealt with and by whom?
- Server performance and storage - scaling up to cope with increasing numbers of e-portfolio users and the growing size of the e-portfolios as users expand them over time?
- What plug-ins, file formats and browsers will be required or supported?
- What technologies will be used to implement an offline, portable e-portfolio that authors can take with them? (XML, content packaging, etc)
- Service level agreements for future software releases - once the system is being used on a basis wider than a pilot study and a resilient and reliable delivery becomes paramount
- What back up systems are in place to ensure operational integrity and disaster recovery?

Support and scalability considerations

- Can the system scale adequately as its usage grows and storage expands
- Will there be adequate staff to develop, deploy and maintain the system?
- Will there be an infrastructure in place to properly train learners and administrators how to use the e-portfolio system?
- Will there be adequate online help or will a staffed help desk be required?

Security and privacy considerations

- What policies need to be in place for governing information access, security and privacy? How will they be controlled?
- How will Data Protection Act agreements be 'signed' on a larger scale?
- What are the issues associated with pre-18 year olds using the system
- What progress can be made with a unique identification number?
- Local security issues with institutions allowing access to MIS/VLEs for learner records.

Ownership and IPR considerations

- How will the e-portfolio system authenticate that all the work, documentation and demonstrations were created by the author?
- Who is the real owner of the artefacts in the e-portfolio file repository?
- How will intellectual property used in an e-portfolio be protected?

- What can or cannot be included in an e-portfolio?
- Who owns the learner record (transcript)?

Adoption

- How likely is it that learners will accept and use the e-portfolio system?
- Will the system be user-friendly enough for adoption?

Maintenance

- How will information be maintained over time?
- What policies are needed for transporting or deleting e-portfolios?
- How will long-term storage requirements be managed?

Interoperability and standards

- How will data entered for e-portfolio purposes be utilised in other ways? By other systems?
- How will standards be adopted into a system that is being developed before robust standards are established?
- Usability - low threshold for participation is required

Further information:

- *Getting what you want from e-portfolio systems:*
- *Institutional Managers in HE*
- *MIS Managers in HE*

The Future of e-Portfolios

'e-Portfolios might evolve into something unrecognisable today or they might become yesterday's unsuccessful idea'

Stefani et al (2007), p1

To be successful, e-portfolios in the future will need to address key issues such as who is going to provide the learner's lifewide and lifelong e-portfolio. This infoKit has focused on e-portfolios provided by the academic institution. However, national trends regarding the management of data, may lead to a more centralised repository of learner information. Therefore, lifelong learners may find that e-portfolios are provided at a national or regional level. An issue raised with learners in the ePISTLE project was who should provide e-portfolios, for example, an independent body or agency could be responsible for this. The EELLS project found that there was a market for an e-portfolio service that 'transcends institutional boundaries and is available throughout the life of a learner'. However, learners may be reluctant to use a system for the disclosure of personal reflection in a system which is remote from them (FILE-PASS) and may feel that 'Big Brother' is watching over their e-portfolios (PDP4Life).

Some future possibilities...

National provision..?

e-Portfolios may be provided at a national level. The Welsh Assembly has acknowledged that keeping an e-portfolio and having the skills to maintain an e-portfolio would be highly beneficial for its citizens. The Welsh assembly is currently embarking on an initiative to provide all Welsh citizens with an e-portfolio.

This development may also become attractive based on any expansion of the current MIAP personal learner record.

Regional provision..?

JISC has already funded several regional projects encouraging and supporting the use of e-portfolios, such as:

The Nottingham Passport is local authority hosted e-portfolio and is recognised throughout Nottingham.

The EELLS project explored the issues and benefits of setting up a regional e-portfolio for lifelong learning. The e-portfolio created by the project is now available to learners studying in the Region within schools and colleges to document their educational and other achievements through the Lifelong Learning Network of the East of England, MOVE.

Wherever and whoever provides the system, e-portfolios are certainly challenging especially for higher education when they are *'being introduced into a climate of rapid technical and pedagogical innovation. The introduction of many new technologies leaves any one of them competing for limited learner and teacher time and tolerance. In some communities (art and design) the keeping of portfolios is widespread, but the practice of reflective learning is novel. In other communities (nursing and social care) the practice of reflective learning is familiar... but the use of ICT in teaching and learning may be novel.'* (taken from the myWORLD final report).

Interoperability, Leap 2.0 and PIOP (Portfolio Interoperability Prototyping)

When discussing which e-portfolio system to implement at an institutional level, it may be found that not one system meets a given a set of requirements or purposes. For example a system that meets the needs of CPD may not be suitable for skills assessment. This leads to more than one system being implemented which brings interoperability to the fore; reusing information across a number of systems (e.g. VLE, Student Record Systems) and enabling a more learner-centred approach to sharing and reuse of personal-related information. JISC-CETIS lead in this area and their website is a source of useful information on interoperability, in particular the section on LEAP 2.0 and PIOP developments.

A good deal of research across the globe is still being undertaken to help inform implementation of e-portfolios:

The Australian e-portfolio initiative is a large-scale project being conducted across four universities (Queensland University of Technology; The University of Melbourne; The University of New England and University of Wollongong) investigating current e-portfolio practice in Australia and seeking to provide practical and strategic guidance to institutions.

The International Coalition for Electronic Portfolio Research brings together researchers and practitioners who are interested and want to explore the effect of e-portfolios in the learning environment. A group of approximately ten institutions are chosen to research a specific area of interest in e-portfolios.

If e-portfolios are really successful, and learners recognise their importance, they could be provided in an analogous manner to email today: learners/people will make a choice between (perhaps) a state-provided 'bare bones' system,

or free commercial services (with banner ads or whatever), or a system offered by an institution they're connected with, or a commercial system they really like and are willing to pay a small fee for. This will pose challenges for institutions on whether they want to insist that learners use their institutionally-provided systems or have a wider choice.

Ongoing JISC work in the e-portfolios activity area crosses a number of innovation programmes. You can download our master catalogue of JISC projects past and present for more information.

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