



e-Portfolios: Their Use and Benefits

A White Paper

Bob Banks, Senior Solutions Architect, FD Learning Ltd

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Introduction

The last few years have seen an enormous growth of interest in e-portfolios and the benefits they can bring to learners. In this paper we will examine what e-portfolios are, the range of ways they can be used, the benefits they can bring and ways to realise these benefits, now and in the future.

One dictionary definition for a portfolio is: 'A container ... for loose papers, drawings, etc.: a collection of such papers.' This does not conjure up exciting connotations: it evokes images of old boxes of yellowing papers in a dusty attic. However, two things belie this image and make e-portfolios one of the most exciting areas of development in education and training at the moment.

- The “e” aspect. The essence of networked computers is their potential to transform static, “dead” information into dynamic, flexible, growing information, which can be shared, developed, recontextualised, searched and viewed from different perspectives.
- The move to lifelong learning and personalised learning [Ref. 1]. This places the learner - their work, achievements, reflections and goals - at the centre of the learning process. In the stereotypical “old days”, when learning consisted of long, fixed blocks, the place of portfolios was limited. However, in the new knowledge economy, it is important for learners to take ownership of their learning, and to continually reflect on where they are, the learning and achievements which have brought them there, where they want to go, and the learning they need to get there. e-Portfolios provide a vehicle to enable this.

An e-portfolio is an electronic format for learners to record their work, their achievements and their goals, to reflect on their learning, and to share and be supported in this. It enables learners to represent the information in different formats and to take the information with them as they move between institutions.

It represents a coming together of several concepts which have a particular resonance at the moment - for example:

- reflective journals;
- Weblogs or “Blogs” - and the shared version – Wikis;
- learning logs;
- personal development planning;
- learning centred on the individual learner; and
- action planning for learning.

Benefits of e-Portfolio Use

By focussing on learners' achievements and work and providing access to related information in a networked or web environment, major benefits may be realised from e-portfolios. These benefits may include:

- Supporting coherent management of a variety of achievements and pieces of work. These can be restructured and viewed in different ways for different purposes, for example, for reviewing learning, planning future learning, or providing evidence for an award or an employer;
- Helping learners take control of their learning and their lives, by reflecting on their activities and planning future directions;
- Providing a learner-centred rather than course-centred view of learning;
- Giving appropriate views of achievement and learners' work to appropriate people, for example, the learner, teachers, mentors, careers advisers, potential employers, educational institutions to whom the learner is applying;
- Supporting "just in time" or "bite sized" learning, by contextualising which bite of learning is needed at this moment in time and helping place it in the context of a long-term learning journey;
- Facilitating a wider variety and more authentic forms of assessment and accreditation;
- Complementing credit-based approaches to flexible accreditation;
- Providing continuity through a learner's lifelong learning as they move between learning providers;
- Helping with continuing professional development, by encouraging reflection on practice, linking this with learning activities and sharing with one's team;
- Linking learners' achievements and work with the skills required by their employers, helping to identify learning needs and "close the skills gap". As well as holding this information for perusal, it can potentially be available, through feeds such as RSS, to "skills brokers" - whether human, or computer agents, which match skills to skills needs, stimulating regional and global economies.
- e-Portfolios can also be used to record the skills, assets, achievements and plans of a group of people - for example a team, a school, a community. [Ref. 2.]

The idea of portfolios is far from new. They have been used for recording evidence and work for many years. However, the "e" in e-portfolios does add significantly to their utility, adding flexibility, ease of sharing, reuse of entries in different presentations for different contexts, portability and different views for different contexts.

Versatility of e-Portfolios

As there is enormous variety between learners in terms of their style and need, e-portfolios must be versatile to cater for the wide range of requirements and contexts. Three main dimensions of variation in e-portfolios are described below:

- Types of information held;
- Stages of learning; and
- Participants.

These are by no means exhaustive, but give an idea of the range which a typical e-portfolio service might provide. In many cases, the variety may be tailored or simplified to suit the needs of the particular context.

Types of portfolio information

Table 1 below provides a list of the potential types of information that might be stored in an e-portfolio.

Table 1 Types of e-Portfolio Information

Type	Examples
Coursework	Ranging from brief notes to extensive assignments. May be in any medium, for example, text, images, sound, video. May be school homework examples, college assignments, for example.
Assessment work	May include diagnostic, formative and summative assessments.
Other pieces of work or “artefacts”	For example, presentations, job or course applications, CVs.
Achievement of individual learning outcomes	May be formally or informally recorded.
Aggregated records of achievement, accreditation and credit towards awards.	Qualifications, awards (and credits towards awards), certificates, completion of courses.
Evidence for assessment	Including evidence for assessment of prior learning.
Planning and reflection	Journal entries, learning agreements, personal development plans, individual learning plans.
Notes and annotations on other entries.	Formal or informal: made by the learner, or by teachers, mentors. Including verification of entries.
Skills and competencies	Taken from to a particular framework, for example, for a job, or informally recorded.
Outcomes of appraisals, interviews, etc.	With tutor, employer, for example. Self-assessments and appraisals.

Type	Examples
	Peer-assessments and appraisals
Images captured on the move	Mobile devices, such as phones, can be used to capture and annotate images for an e-Portfolio.
Links between entries	Pieces of work contributing to an award: planning to achieve particular skills, etc.
Entries shared with peers	e-Portfolios can support peer group learning, with shared assignments, and commentary on each other's work and ideas.

Stages of learning

Table 2 below outlines the different stages of learning and how that might impact on the uses of e-portfolios.

Table 2 Stages of Learning

Stage	Relates to	Notes
School - up to 14	Progress files	The organisation of learners' work and progress, and access to it, is one of the central benefits that ICT can provide in schools. This helps support personalised learning, and transitions between stages, as well as work within a stage.
14 -19	Progress files	Could be an essential enabler for Tomlinson's "diploma" vision of learners on individual programmes, across school, college, work placement, days at University etc. Relevant to both formal transcripts of achievement, and to more formative records of ongoing work. [Ref. 3]
College	Progress files: Widening Horizons	Multiple views of learners' work becomes increasingly important in further education - for example for evidence based assessment or accreditation of prior learning.
University	PDP, learner transcript.	It will be mandatory for universities to support personal development planning by 2005, and most universities are planning to provide online support for this.
Continuing Professional Development	Various formats of e-portfolio	Portfolios of work - possibly work which the learner is doing anyway (e.g. lesson plans, case notes) - with reflections on practice, and feedback from tutors and peer group - are often central to CPD.
Lifelong learning	Various formats of e-portfolio	As learners move from one learning episode to another, often with different providers, being able to take their work and achievements with them is important.

Participants

One of the key benefits of e-portfolio technology is that access to different types of information can be defined for each user. Table 3 below lists the participants that might have access to an e-portfolio and the types of access it might be deemed appropriate to allow.

Table 3 e-Portfolio Access by Participant

Participant	Access to
Learner	Everything. The entire portfolio is seen as “owned” by the learner and under their control.
Teacher	Work relevant to areas the teacher is teaching where the learner gives permission.
Mentor	All information where the learner gives permission.
Progression Adviser	Aggregated achievement information, and learners’ plans and reflections, to facilitate discussion on the learners’ aspirations and next moves.
Parent / Carer	All information where the learner gives permission.
Award Assessor / Examiner	Evidence and potential evidence for the specific award.
Potential Employer	Aggregated achievement information - analogous to a CV.

Accreditation and Assessment

An important part of the move to flexible lifelong learning is an environment for responsive, integrated assessment and accreditation of achievement. e-Portfolios have a great deal to offer in supporting this.

Portfolio-based assessment for awards has a long and successful history. e-Portfolios enhance the convenience, availability and relevance of this form of assessment. In moving forward, we see the following as important:

Credit frameworks for awards. Credit frameworks enable learners to build up credit towards an award gradually in units. This enables more flexibility in the accreditation process, since learners can transfer credit between awards and institutions. They do not have to commit at the beginning of their learning to the award they will be aiming for. This can adapt as their learning, work and life circumstances develop. There is now a significant policy commitment from the QCA and others to expanding credit frameworks in the UK, with the “framework for achievement” in particular moving this forward [Ref 4].

e-Portfolios can be ideal for supporting credit-based awards because:

- They can record the whole range of information about achievement of units making up an awards: evidence, assessor comments, reflections and plans relating to progression towards the awards, as well as achievement of learning outcomes and units of credit.

- They support managed and authenticated access to appropriate parts of the e-portfolio for assessor and tutor roles as well as for learners.
- With appropriate standards specifications and working practices (see below), they support the transfer of credit and related information between institutions.

More authentic assessment. For example, assessment related to the “normal” application of the skills and knowledge being assessed, rather than artificial assessments, such as exams whose setting is very different from normal application.

Fewer boundaries between work, learning and accreditation. The flexibility of e-portfolios helps learners think about their experience and work as relevant evidence for credit and awards.

Work-based assessment. In the UK, NVQs are the most prominent example of this approach. FD Learning has the **SkillsFolio** product which is based around portfolios of evidence, but which also supports the detailed workflow of assessors going out into the workplace and following the NVQ assessment processes.

A wider and more flexible range of approaches to assessment. For example, at 14-19, Tomlinson [Ref. 3] discusses e-assessment, teacher assessment, traditional examinations, and project and presentation based assessment, with a flexible balance of assessment approaches. Tomlinson acknowledges that this balance provides a challenge, and that more work is needed on assessment arrangements. The flexibility and appropriate accessibility of e-portfolios can provide a useful tool in meeting this challenge, although care is needed to ensure the validity of portfolio contents for high-stakes assessment [Ref 5].

e-Portfolios in a Wider Context

e-Portfolios may often be used on their own, but they can also be one service within a complete e-learning environment. Figure 1 below gives one example of how an e-portfolio could fit together with other services.

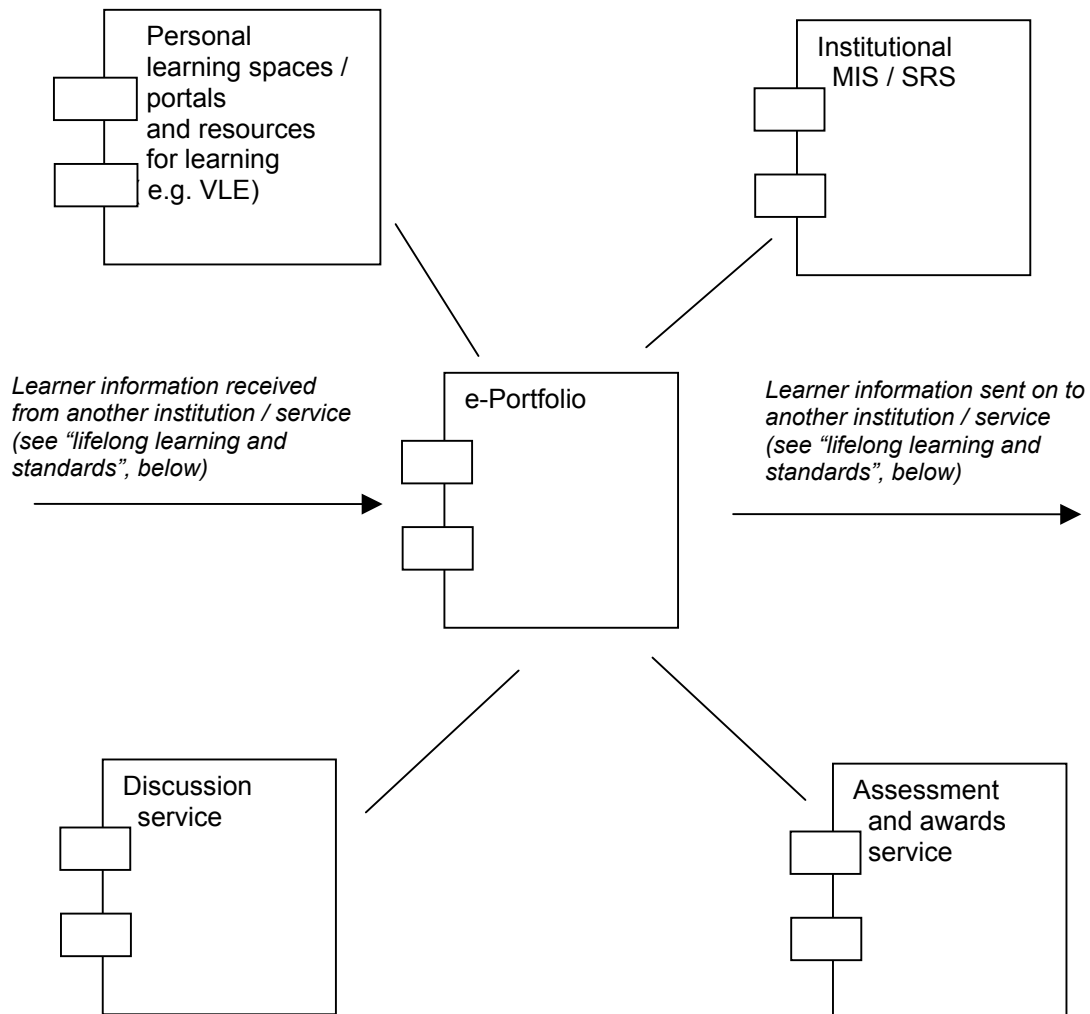


Figure 1: e-Portfolio in the context of an e-learning environment

Achieving Success with e-Portfolios

Traditionally, learners have found reflective learning quite difficult. It demands a high degree of commitment and effort from the learner. It is also very different from the “traditional” image of learning, with which most learners have grown up, whereby the teacher is the fount of knowledge and the learner’s job is to absorb this.

We should not under-estimate the challenge involved in achieving the buy-in of learners (and teachers). Three key factors for success are:

1. Clarity of purpose and institutional commitment.

If e-portfolio use is seen as an “added extra”, many learners will find it hard to see its relevance and to find the motivation to use them effectively. e-Portfolios will support learning more effectively where they have a clear, integral role in the programme of study.

2. Sense of ownership for the learner

It is important that the learner feels in control of their e-portfolio and that it is serving them as an individual.

3. Effective support

Skills of planning and reflection are higher-order skills, which do not come automatically to learners. Significant scaffolding and support may be needed to enable learners to function effectively in this mode.

There is a danger of e-portfolio centred learning becoming a solitary activity. While in some cases this may be the most practicable mode of learning, in general, learning is a social process and dialogue with others is an integral part of the learning process. This can be supported by providing communication facilities in the e-portfolio framework, for example, controlled sharing with tutors, fellow learners and others, annotation capability, links to discussion fora and email around areas of the e-portfolio.

e-Portfolio Initiatives

There are a number of significant collaborative initiatives to move forward the concept of e-portfolios, both in Europe, and in North America. Some examples are:

- The Europortfolio initiative in Europe. Its mission is to promote the user of e-portfolios as one of the foundations of a learning economy and society across Europe. Part of this is the “e-Portfolio for All by 2010” manifesto. As well as an information exchange and evangelising role, contribution to the evolution and consistency of standards are part of the brief. The founding members (Eifel, European Schoolnet, CETIS, and IMS in Europe) do represent key, major players in the European e-learning world. [Ref. 6]
- EportConsortium in North America. This “is the collaboration of higher education and IT institutions working to define, design, and develop electronic portfolio software environment and management systems.” A goal is to help achieve consistency and interoperability between approaches and systems, both at a conceptual and a technical level. [Ref. 7]

In addition, a number of major organisations have made policy decisions to adopt e-portfolios to support learning and career development. For example:

- The UK Royal College of Nursing, the largest professional body in the UK (350,000 members) who uses ePortfolio for continuing professional development (CPD) and re-accreditation of nursing
- A number of large University medical schools, for example Edinburgh and Newcastle use e-portfolios as a core part of medical training.
- Careers Wales have made an e-portfolio available for all citizens of Wales.

Lifelong Learning and Standards

In future, learners are likely to learn with many different institutions and providers over their lives. It will be important for their e-portfolio, particularly those aspects of it which have significance beyond a particular learning episode, to be portable between institutions and services.

This is the reason for standards. Specifications for standards in the area of e-portfolios are reasonably well advanced. They revolve around:

- IMS LIP (Learner information packaging). This is the core specification which underlies the transfer of learner's records between systems or institutions. It is workable and is being used to transfer data. However, profiles which firm up the meaning of some of its elements, for a particular domain, are useful in giving it more value - such as those mentioned below. [Ref 8]
- IMS e-Portfolios. This specification is currently (Dec. 2004) in its public draft stage - potentially close to being agreed. It profiles and builds on LIP to provide the data types and relationships which are of relevance for e-portfolios. [Ref. 9]
- IMS RDCEO (reusable definition of competency or educational objective). This is a specification for the description of competencies / learning outcomes / skills. It would typically be used to describe the framework of skills or learning outcomes which are, for example, associated with a particular award or curriculum area. Learner's LIP or e-portfolio records would then reference this framework. [Ref. 10]
- UK-LIP This is an application profile¹ of IMS LIP to support the information required for personal development planning and learner transcripts in UK higher education. [Ref. 11]
- The British Standards Institute (BSI)'s BS 8788 - UK-LEAP is currently under development. It will be closely based on IMS LIP, and linked to IMS e-Portfolios.

¹ An application profile is a mapping of a specification, such as LIP, for a particular community or purpose.

The Position of FD Learning

As we have seen, there is a wide variety of contexts and purposes for which e-portfolios can be used. To meet this variety, FD Learning has incorporated e-portfolio functionality in our products in a number of ways. This is illustrated in Figure 2, which shows three contexts for e-portfolio use, along with the FD Learning tool which fits this context. Our approach enables us to lift the appropriate modules, and embed and adapt them in new solutions. We have put in place e-portfolio solutions for customers such as **learndirect** and the National Network of Science Learning Centres. More information on FD Learning products and solutions can be found at our website:

www.flearning.com

FD Learning is also an active contributor to national and international forums around e-portfolios: for example to development of the IMS e-portfolios specification and the BSI UK-LEAP standard (see above.)

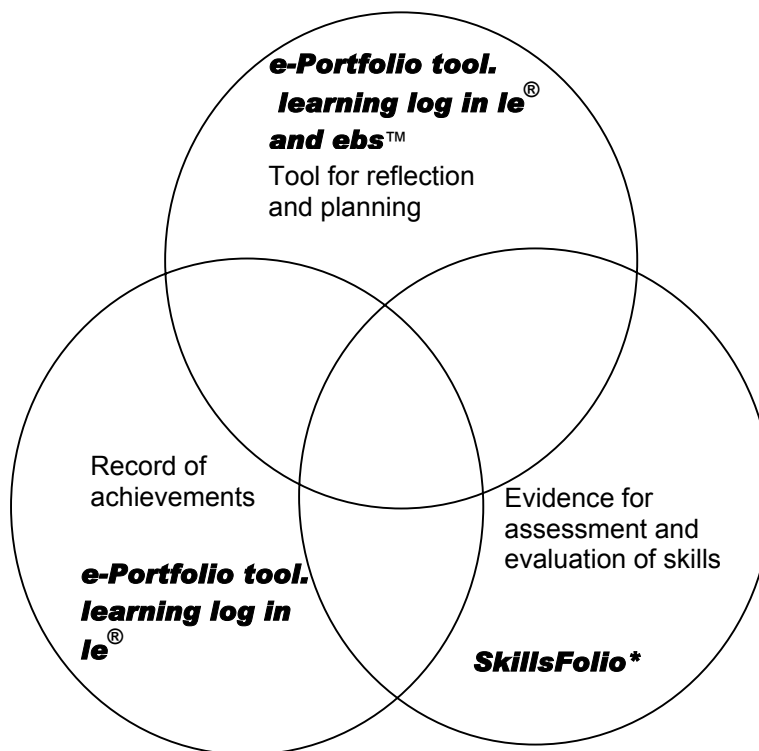


Figure 2: Eportfolio contexts and FD Learning tools.

* Currently, SkillsFolio is specific to assessment for NVQ awards.

References

1. Links in to UK government thinking on personalisation are at <http://www.standards.dfes.gov.uk/innovation-unit/personalisation/>
See also the Tribal Technology / FD Learning report on ICT for personalised learning at <http://www.tribaltechnology.com/pdfs/Personalised%20Learning%20-%20R1104.pdf>
2. This can help with approaches such as “asset-based community development” which aim to give communities a strong voice in the development of the services available to them. See for example “Agents Rather than Patients” (Building & Social Housing Foundation, 2003) at: <http://www.bshf.org/en/to.php/publications/info.php?id=00001>
3. The Tomlinson Report (“14-19 Curriculum and Qualifications Reform: Final Report, Oct. 2004) proposes a new diploma framework, where transcripts of achievement play a central role. www.14-19reform.gov.uk
- 4 Coverage of policy on UK credit frameworks / framework for achievement (LSDA and QCA) <http://www.lsda.org.uk/programmes/credit/index.asp>
<http://www.qca.org.uk/10710.html>
5. Wikerson and Lang <http://epaa.asu.edu/epaa/v11n45/> provide a discussion of the issues - very much from an American perspective - but their table 1 - “Requirements and Caveats” provides a useful checklist.
6. Europortfolio - see www.europortfolio.org
7. Eportconsortium - see <http://eportconsortium.org>
8. <http://www.imsglobal.org/profiles/index.cfm>
A briefing paper on LIP is at : <http://www.cetis.ac.uk/groups/20010801124300/FR20021029103504>
9. <http://www.imsglobal.org/ep/index.html>
10. <http://www.imsglobal.org/competencies/index.cfm>
11. <http://www.cetis.ac.uk/profiles/uklip> The European CEN/ISSS body have also chosen a compatible path with their "Guidelines for the production of learner information standards and specifications" - see <http://www.cetis.ac.uk/content2/20031010103508>

Further reading

The white paper from Eportconsortium (see ref. 7) provides a comprehensive overview of thinking on e-portfolios from a North American perspective.

http://www.eportconsortium.org/Uploads/whitepaperV1_0.pdf

A useful reflection on the particular perspectives of the UK and Europe is:

“E-portfolio and its relationship to personal development planning: A view from the UK for Europe and beyond”: Simon Grant, Peter Rees-Jones, Rob Ward:

<http://www.inst.co.uk/clients/jisc/e-portfolio/def.html>

Recent conferences, presentations from which provide a way in to the latest thinking include:

- Eportfolio 2004 (La Rochelle, France): <http://www.eife-l.org/projects/Europortfolio/>

- Eportfolio Canada 2004: http://www.lifia.ca/en/learn_eport_conf_van04_pre.htm