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The Role of e-Portfolios in Formative and Summative Assessment:
Report of the JISC-funded Study

Prepared by the Centre for Recording Achievement for JISC

August 2009

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Introduction:

This JISC-commissioned study on the role of e-portfolios in formative and summative assessment was carried out during the period April 2008-December 2008 by the Centre for Recording Achievement (see http://www.jisc.ac.uk/whatwedo/programmes/elearningcapital/studyontheroleofeportfolios.aspx)

The study encompassed a landscape scan of existing practice in UK HE (including HE in FE), and the identification of 34 case studies of existing practice[1]. Data gathered through telephone interviews were entered on to a proforma and returned to the respondent for checking and editing. In addition we carried out a more detailed study visiting four institutions to look at different stakeholder perspectives and carried out telephone interviews with a sample of external examiners or assessors. Three of the four institutions visited were selected because practice was well-established and made use of more than one tool. One was selected because it provided an innovative institutional framework which we judged to offer a truly transformational potential. Further details of our methodology can be found in the appendices of this document.

Each case follows a common format. The case studies themselves vary in length and completeness: whilst some respondents were unable to answer all of our questions, others supplied large quantities of additional material. Most of this additional material has been included, following the relevant case study proforma: such material is identified in the heading of the case study. Table 1 on page 4 lists the case studies, arranged approximately in ascending order of the level of qualification addressed. For further information on any of the case studies, please contact the individual whose name and contact details are given in the case study heading.

Chapter 1 introduces the terminology, principles and key sources of reference used in the study.

Chapter 2 summarises the key benefits and difficulties which emerged from the study, drawn from analysis of specific questions asked of the case study respondents but also informed by data from the visits and from the external examiners and assessors. Benefits are considered in relation to Table 2 on pages 10-14, which maps likely benefits in terms of both administrative **efficiency** and **enhancement** of learning against typical e-portfolio functionalities. Table 2 also gives some indication of which case studies provide good examples of the benefits listed. The chapter ends by summarising our case study respondents' beliefs about what the future holds for them and the advice they have to offer those thinking of embarking on the use of e-portfolios for assessment. This chapter and the next should be read in conjunction with the document containing the case studies.

The study deliberately set out to capture a range of practice in terms of technology used, level, discipline, scale and the precise use in assessment terms. Because of the extent of practice found, we were frequently able to make comparisons within disciplinary groups, groups with cognate disciplines or groups where the use of the e-portfolio tool had a particular purpose. **Chapter 3**, 'Analysis of practice', is intended to offer a way into the themes and issues raised by the case studies by taking cognate examples of practice, by level or discipline, to compare and contrast. In the first section, the key themes and issues which emerged are summarised, followed by more detailed analysis of different groups. The groupings chosen relate to: foundation degrees; HE levels 1 and 2 where the practice primarily supports personal

[1] The proformas for 33 of the 34 case studies are gathered together in an accompanying document. The 34th case study refers primarily to a recently-developed institutional framework to allow practice to flourish. It is not best described through the questions within the proforma, but is separately described on pages 51-53.

development planning (PDP); learning technology-related programmes; education programmes both as in initial training for teaching in schools and in-service training in HE and FE; other professional programmes (Law, Social Work, Medicine, Midwifery); arts-based programmes; and practice related to developing employability. This chapter ends with some individual accounts of more or less successful experience which did not constitute case studies of practice but yielded valuable insights into why practice fails or succeeds.

Chapter 4 reports on a series of telephone interviews with external examiners and assessors. External assessors are most likely to be associated with courses with professional accreditation in which students are required to demonstrate professional competences in relevant contexts outside the HE institution. Assessors are very often professionals already working in relevant contexts who take responsibility for evaluating and reporting on the performance of individual students in the workplace or clinical setting. External examiners in contrast do not usually have contact with individual student: they are most likely to receive samples of student work and other supporting information in order to assess the quality of course provision, including the validity of assessment regimes and will also participate in exam board meetings. This chapter is a self-contained study.

Chapter 5 takes four institutions where e-portfolio practice is well-embedded and looks at the perspectives of other stakeholders within the institution. In particular it takes a brief look at the perspective of the learning technologist who supports the practice described in the case studies. The first three institutions visited had all yielded more than one case study using different tools. The fourth institution was chosen, even though the practice observed is at a very early stage, because of the breadth of the vision encompassed by the curriculum framework and its implications for freedom of choice of both technology and curriculum content by the students.

Readers interested in the methodology used should read **Appendix 1,** 'Aims and Methods of the Study' which also gives the protocol for the collection of the case study data.

Readers interested in the range of current practice should read **Appendix 2**, 'A landscape of e-portfolio practice in assessment' which reports on the first step of our investigation.

Appendix 3 is a proposed set of principles for e-portfolio assessment, which may be of interest to those working in the field of assessment generally.

Table 1: The Case Studies

	Institution	*Subject area*	*Level and module*	*No. of students (where known)*	*Formative or summative asessment*[2]	*Tool*[3]
1	Portsmouth University	Early Childhood Learning, Educational Administration, and others	Foundation Degrees, all years Professional Development Unit		Formative and summative	WebCT
2	City of Sunderland College of FE	Service Management	Foundation Degree, Year 2 40-credit PDP module		Formative and summative	BB
3	Wolverhampton University	Sport, Performing Arts and Leisure	Level 1 u/g module for dance students		Formative and summative	PP
4	Queen Margaret University	Media, Communications and Sociology, Psychology	Year 1 u/g 'Study and IT Skills' 10-credit module		Summative (Pass/Fail)	PP
5	Oxford Brookes University	Business	Year 1 u/g 15-credit module 'Intercultural communication'		Formative and summative	PP
6	Wolverhampton University	Humanities, Languages and Social Sciences	Level 1 u/g Skills module	200+ students	Formative and Summative	Wolf VLE
7	Liverpool John Moores University	Sports Science	Modules in u/g Years 1 and 2 Sports Development		Mainly formative	BB
8	Wolverhampton University	Construction/ Management / Engineering	Level 2 u/g module 'Communication and Research Methods'		Formative and summative	PP

[2] In relation to the formative/summative dimension (see para. 1.1.3.), it should be noted that these terms are not always clearly defined in the minds of practitioners and we have had at times to interpret their responses. We have taken 'formative' to include cases where feedback has been given (or offered) on work prior to its final assessment (but not subsequent to that assessment) as well as cases where it is clear that no summative function is intended. We have also taken 'summative' to include those cases where work is required but not graded in any way. In practice, in most of our cases assessment has both a formative and a summative function.

[3] BB refers to one or more tools from the Blackboard suite of software. PP refers to PebblePAD (see http://www.pebblepad.co.uk/)

9	Northumbria University	Business Information Systems/Business Information Technology	Year 2 u/g Professional Development module		Formative and summative	BB
10	Westminster University with UKCLE	Law	Year 3 u/g Work-based Learning module	c. 60 students	Formative	PP
11	Sheffield Hallam University	Applied Social Science	Years 1-3 u/g in three 20-credit modules		Formative and summative	PP
12	Staffordshire University	Social Work	BA Social Work		Formative and summative	Purpose –built: (SWEAP)
13	Anglia Ruskin University	Learning Technology	BA in Learning Technology and Research		Formative and summative	Plone
14	University of Westminster	Property and Construction	BSc programmes, modules at all levels, within the Department of Property and Construction,	150+ students	Formative and summative	BB
15	Wolverhampton University	Midwifery	BSc (Hons) Midwifery	c.70 per cohort	Formative and summative	PP
16	London College of Music at Thames Valley University	Music/Audio Technology	FdA, BA, MA		Display only	Joomla with plug-ins
17	University of Nottingham	Extra-curricular award	All undergraduates		Pass/Fail	PP
18	University of Newcastle	Medicine	MBChB (5-year undergraduate medical degree) Years 1-3	c.250 students	Formative and summative	ePET
19	Portsmouth University	Electronics and Computer Engineering	M.Eng Year 1 (1x10 credits and 1x20 credits); Year 3 (2x10 credits); Year 4 (1x30 credits	c.250 students	Formative and summative	Purpose-built: (MOSAIC)
20	University of Strathclyde	Pharmacy	4-year MPharm		Formative and summative	Purpose-built
21.	Wolverhampton University	Social Work	MA in Social Work module 'Principles of safe practice'		Formative and summative	PP

22	Glasgow School of Law with UKCLE	Law	Postgraduate vocational course (Legal Practice)		Formative only	PP
23	Oxford Institute for Legal Practice with UKCLE	Law	Postgraduate vocational course (Legal Practice)	c.20 students	Formative only	ELGG with Moodle
24	NHS Scotland	Medicine, dentistry, pharmacy, nursing, health administration	Postgraduate training initially: spreading to u/g	c.45,000 students/ graduates	Formative and summative	Purpose-built
25	Norwich University College of the Arts	Digital Arts	MA in Digital Arts	c.15 students	Formative and summative	Word-Press
26	Northumbria University	Education (Schools)	Professional Development Award for serving teachers		Formative and summative	Purpose-built
27	Gateshead College of FE	Education (FE)	PGCE for FE lecturers and trainers, public service trainers and private training providers		Formative and summative	ePET
28	University of Cumbria	Education (HE and FE)	PGCEd for staff		Formative and summative	PP
29.	University of Aberdeen	Education (HE)	PGCertHE for staff Both 30-credit modules		Formative and summative	WebCT
30.	Newcastle University	Education (Schools)	(PGCE)English and Drama in 2007-8, all 13 programmes in 2008-9	c.160 students	Formative and summative	ePET
31.	Liverpool John Moores University	Education (Schools)	(PGCE) All 10 subject groups		Formative and summative	Purpose-built
32	University of Southampton	Education (Schools)	PGCE Four subjects: IT, Geography, Science and RE		Formative and summative	Purpose-built
33.	Open University	Educational Technology	MA in Online and Distance Technology 30-point module 'The e-learning professional'		Formative and summative	Purpose-built: (MyStuff)
34	University of Bolton	Master in Learning Technology	Interdisciplinary Degrees in Inquiry-Based Learning		Formative and summative	Free choice

1 Assessment, e-assessment and e-portfolios: definitions

1.1 What is assessment?

1.1.1 The essential meaning of assessment is the act of making a judgement about the value of someone's product or performance. The actor or agent – the person who makes the judgement - is often an individual with responsibility for teaching the assessee, but might also be the assessee him or herself, a peer or group of peers, an assessor who has not been involved with teaching or even a piece of technology designed to recognise pre-determined parameters of the performance. The act of assessing might take place at one point or over time. The product or performance is generally a demonstration of some combination of knowledge, understanding, skill; sometimes of values and other personal attributes; and is very often taken to be a representative sample of the assessee's 'usual' or normal' performance: that is, it is assumed to represent some underlying and stable level of knowledge, skill or ability, or some consistent personal attribute.

1.1.2 Confusingly, assessment is also used to refer to the product/performance, or to that which is assessed. For example, the definition of assessment in the JISC e-Assessment Glossary (JISC 2006a) states that assessment is: 'the instrument (e.g. on-screen examination) used to arrive at … an evaluation' and also 'the process of evidencing and evaluating the extent to which a candidate has met or made progress towards the assessment criteria.' [4]

1.1.3 The terms 'formative' and 'summative' do not describe different types of assessment. They refer to the purpose of the assessment, the use to which it is put. The summative purpose of assessment is to identify educational achievement as a matter of public record, for use in selection (for employment or further study) and certification (for example, of fitness to practise a profession). The formative purpose is to provide information to the learner and others concerned with the process of learning about the learner's progress, strengths and areas for improvement. Practitioners often refer to assessment used for formative purposes as 'feedback'. The term 'diagnostic assessment' generally refers to assessment which takes place before a period of learning, to provide advance information to the tutor and learner about the learner's prior knowledge and skills and what might be an appropriate starting point for new learning. An increasingly common term which would include both formative and diagnostic purposes for assessment would be 'assessment for learning'.

1.1.4 From the work of Black and Wiliam (1998) through to the Scottish 'Assessment is for Learning' Project[5], assessment for learning has come to be seen as a vital component of school-based education[6]. In HE, the work of Boud (2007), Knight (1995), Knight and Yorke (2003), the HEA-funded SENLEF project (Nicol and McFarlane-Dick 2004; 2006) and most recently, the REAP project [7] have developed both theoretical understanding and practical

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4 See http://www.jisc.ac.uk/uploaded_documents/eAssess-Glossary-Extended-v1-01.pdf

5 See http://www.ltscotland.org.uk/assess/index.asp

6 See for example http://www.qca.org.uk/qca_4336.aspx

exemplars of transformative assessment practices. Baume (2001) provides a useful (albeit mostly pre-e-portfolio) practical guide on portfolio assessment.

1.1.4 There has been a series of attempts to develop a set of clear principles, underpinned by good evidence, to guide assessment practice which is pedagogically valuable as well as being accepted as valid and reliable. The Assessment Manifesto (Brown, Race and Smith 1996) was probably the first widely circulated attempt, with ten principles; the SENLEF project produced seven principles relating specifically to formative assessment; Gibbs and Simpson (2005) produced ten 'conditions under which assessment supports learning'; and most recently the ASKE CETL at Oxford Brookes (Price and O'Donovan 2008) has produced six 'tenets' of a manifesto for change in assessment standards[8], also widely circulated.

1.2 E-assessment: why and what

1.2.1 Increasing student numbers have been an important driver for UK HE in the adoption of learning technologies to support learners. However, assessment technologies have generally been about doing what is already being done more efficiently. The importance of increased efficiency in contributing to improved student learning should not however be under-estimated. In an analysis of the real increases in academic staff workloads in the last fifteen years, Gibbs notes that *"there have been some economies of scale in teaching…but…assessment costs usually increase in direct proportion to the number of students"* (Gibbs 2006 p.12). As a direct result of this Gibbs claims that fewer assessment tasks are set, the tasks themselves require less from students (and therefore less from staff in assessing them) and there are fewer opportunities for formative feedback to students. Thus, increasing the efficiency of assessment could directly benefit student learning.

1.2.2 The JISC eAssessment Glossary defines e-assessment as 'The end-to-end electronic assessment processes where ICT is used for the presentation of assessment activity and the recording of responses.' In the JISC publication *Effective practice with e-assessment* (JISC 2006b) the emphasis is on technological support for the more efficient administration of assessment processes, rather than on the use of assessment to support learning, as noted above. (The Glossary defines assessment for learning as a 'term invented by William (sic) and Black...the process of seeking and interpreting evidence of a learner's performance for use by learners and their teachers to identify where the learners are in their learning, where their next learning goals are, and what to do next to achieve them. ')

1.2.3 E-portfolios used for assessment occupy a relatively small proportion of the text of *Effective practice with e-assessment*. The sister publication *Effective practice with e-portfolios* (JISC 2008) is not specifically concerned with the assessment function of e-portfolios, consequently few of the case-studies relate to this function. Thus a study which focuses specifically on the use of e-portfolio technology for assessment purposes is timely. The value of portfolio assessment in supporting and enriching the process of learning has

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[7] See http://www.reap.ac.uk/

[8] See http://www.business.brookes.ac.uk/learningandteaching/aske/Manifesto%20final.pdf

been claimed for many years. The growth of interest in electronic portfolios has rekindled the debate and holds the promise of addressing both the pedagogical justification for portfolio assessment and the issues around burdensome administration and assessment processes which have arguably hindered a more rapid adoption of portfolios across education.

1.3 E-portfolios: why and what?

1.3.1 As the JISC publication *Effective Practice with e-Portfolios* (2008)[9] points out, the term is increasingly used to refer to both product and process. The product is a 'purposeful aggregation of digital items' in some form of repository. Multiple e-portfolios might be created from the same repository or set of repositories for presentation to different audiences. Behind this lie ' rich and complex processes of planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback' which may be referred to generically as 'e-portfolio-based learning'. The JISC Infokit on e-portfolios comments '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'.[10] In 2007, a JISC overview paper[11] identified a generally accepted range of purposes: application (to employment of further study); supporting transitions; for learning, teaching and assessment through supporting reflection, discussion and formative assessment, and providing evidence for summative assessment; personal development planning (PDP) and continuing professional development (CPD). This range is also recognised in the *Effective Practice* publication.

1.3.2 Table 2 (pp. 12-16) gives a matrix of the range of functions typically associated with e-portfolio tools and in what ways they might be considered to have benefit for educators and/or learners, both in terms of **efficiency** (in carrying out the administration and processes of assessment) and **enhancement of learning**.

1.3.3 The concept of a portfolio as the holder for an individual's collection of artefacts has a long-established history, especially in art and design disciplines. The large majority of e-portfolio tools are capable of holding electronic artefacts authored by the learner, including office tool files, photos and graphics, and possibly audio and video files – though sometimes it is expected that these are stored by a third party service provider such as YouTube – as well as the reflections and narratives that are increasingly recognised as relevant to assessment. Grant (2009) notes that common functionality seen in e-portfolio tools includes input of and storing information both from the learner and from others; managing and organising artefacts and information, including tagging and constructing linked narratives; and setting varied permissions to several people or groups for viewing and giving feedback.

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[9] At http://www.jisc.ac.uk/effectivepracticeeportfolios

[10] JISC infoNet – What are e-portfolios? , at http://www.jiscinfonet.ac.uk/infokits/e-portfolios

[11] E-portfolios: An overview of JISC activities, at http://www.jisc.ac.uk/publications/documents/pub_eportfolio_overview.aspx

Table 2: *Matrix of e-portfolio functionality and pedagogical/administrative value against case studies*

Functions associated with e-portfolio-related information systems[12]	*Likely **efficiency** gains*	*Likely **enhancements** to learning*	*Key Case studies/ comments*
A. Related to input of information			
Upload of digital artefacts to a virtual space	Learner's work is in one place, less likely to be lost and potentially accessible to a range of assessors (and possibly peers)	Simple technical skills – uploading files	All
Use of mobile technology: The facility to 'capture' events (most often images, video, audio files) and upload at a later point.	Tutor might more immediately comprehend a learning issue. The assessor can (perhaps) see a more immediate or richer record of an event and form an individual judgement separately from the learner's own commentary/claim. Allows triangulation with perceptions of workplace assessors.	Learner can capture an event for later analysis and reflection, and/or for sharing with tutors and peers. Particularly useful in the rich but chaotic and sometimes isolated learning environment of the work placement. Peers may also be more motivated to engage, thus promoting learning.	All case studies use technology which can in principle handle multimedia. In practice, nearly all evidence is text-based, but see **26** and **31**
Selection of artefacts to upload: (Not a separate function of the technology but an associated process)	This may actually create a considerable increase in workload for the tutor: when the evidence is not pre-specified, standards may be more difficult to judge, decisions may take longer to make and moderation processes may need to play a greater role. .	A pedagogically significant process. The learner must consider what to select and how it provides evidence, therefore needs a deeper understanding of the nature and meaning of the standards, learning outcomes etc. than is gained through uploading pre-specified items.	In some case studies, the e-p tool does **not** store artefacts for re-purposing; see **19, 24, 25, 31, 32.**

[12] There is no implication here that all these functions are unique to e-portfolio technology, however defined.

Functions associated with e-portfolio-related information systems	*Likely **efficiency** gains*	*Likely **enhancements** to learning*	*Key Case studies/ comments*
B. Related to managing information			
Pre-structured organisation of artefacts/records: The structuring may be a set of criteria, standards, learning outcomes, content headings, or other categories. The learner to classify what they have produced.	Learner's work is organised, making it easier for both learner and assessor to check that all requirements have been met, and help the assessor find evidence. May help the learner plan and manage learning.	Classifying items into such a pre-set structure may (on its own, without any requirements for 'reflection') enable the learner to recognise and articulate their learning, and to track its progression.	**12, 18, 19, 20, 21, 24, 30, 32**
Date-stamping of activities e.g., blog entries, upload of artefacts	Assessor can see chronology of learner's activity. Might allow the assessor to make judgements about the learner's management skills, or simply help reveal the process of learning, which can then be assessed.	Learner can see chronology – may be useful if linked to a time management activity, or in developing awareness of progression.	Particularly important in **4, 5, 25**
Linking together of artefacts/records[13]:	Assessor can move quickly between evidence and justification, or between	Reflective learning really comes into play at this point. The link may be made between the	

[13] Terminology is always awkward here. Pedagogically it makes sense to distinguish between:

- An 'artefact' or item of evidence, which implies something created outside the portfolio system (though within the learner's educational or work programme). This is perceived as a 'product' of some kind; and

Usually this involves the creation of a 'reflection' or 'commentary' which refers to the artefact(s), explaining its / their significance. Linkage between artefact(s) and record(s) may be 1:many, 1:1 or many:1.	reflection and related evidence to see whether/how the artefact supports the reflection or claim. Allows the creation of a 'summary page' which distils the evidence for the assessor.	reflective record and the artefact, explaining its significance; or between the reflective record and the organisational structure, as in making a claim that one's evidence meets a set of criteria.	
'Home page'/ summary document which can be used to summarise/link to key evidence	Because the learner has the responsibility for selecting and summarising, the assessor's task should be easier. The assessor can sample evidence rather than check all evidence. The coherence of the presentation might become an important criterion.	Depending on assessment requirements, the production of such a summary can stimulate a meta-level of learning, where the learner reflects on overall learning, integrates learning across different experiences and selects best evidence of learning for presentation. This could be a narrative of learning or a précis.	Not widely used.

- A 'record', which is most often created within the portfolio system. This is the user's commentary, reflection, statement or claim of attainment, produced expressly or primarily for the portfolio.

Functions associated with e-portfolio-related information systems	*Likely **efficiency** gains*	*Likely **enhancements** to learning*	*Key Case studies/ comments*
C. Related to output/communication of information			
Allows viewing/commenting by tutor: May be for whole portfolio or for individual items/pages	Feedback held securely with learner's work. However, the real efficiency comes from a combination of the facility to comment on individual items/pages with the facility to receive notification of changes (see below).	The learner can receive ongoing feedback from tutor. This is more likely to happen and to be of value when the tutor can comment early on individual items and their relationships, rather than just on the whole portfolio.	Bb only allows comment on whole portfolio, not on individual items.
Allowing viewing/commenting by others within a community e.g. peers, employers, work-based mentors	Group feedback supplements tutor feedback: group learning can take place without the problems of organising set times and locations.	The learner can receive feedback from peers and access many of the advantages of group learning without the need for face-to-face contact: 'anytime, anywhere group learning'. Employers and work-based mentors can also access the learner's work and give feedback.	Learners often reluctant to share their work with peers
Facility to notify user/tutor/learning community when new comments or entries are added, current entries edited or deleted, links added or changed.	Tutor can keep track of progress in learning for a large group of learners without the need to check entire portfolio contents (an issue repeatedly highlighted as burdensome)	Ongoing active engagement by the learner with their learning and their documentation of their learning	
Viewing/ commenting permissions to be set by user		This may help the learner develop a sense of audience, and to consider issues of personal privacy.	

Allows multiple presentations of contents, including to particular external audiences	Could present an integrated view of the learner's learning (particularly when the presentation begins with a home or summary page) which can be assessed more quickly than an examination of multiple items of evidence (on the assumption that the learner has chosen the best evidence to link to).	This is believed to help develop: The learner's sense of identity or multiple identities; An understanding of different audiences and their needs and interests; The ability to articulate skills and qualities appropriate to different requirements; and The ability to analyse experiences and achievements in terms of the skills and attributes they demonstrate. It may also help to integrate learning (see above).	pP, Bb and ePET all allow this but little use made of the facility. Best example is **14**
Summative assessment and its administration (Not a separate function of the technology but an associated process)	The greater ease of access and handling of an e-portfolio compared to a p-portfolio makes the logistics and administration of assessment much easier. And e-portfolios are harder to lose. If the 'self-assessment' approach suggested on the left has been adopted, then the assessor's work may be reduced to checking the accuracy of the student's self-assessment, a major saving of time without loss of rigour.	The student can usefully be encouraged to assess their own learning against the learning outcomes and assessment criteria. They can do so as their introduction to the portfolio. This self-assessment can be hyperlinked to relevant artefacts and records. This enables the learner both to satisfy themself and to make a reasoned and evidenced claim that they have achieved the outcomes and many assessment criteria. If this self-assessment is done early, the learner has time to make any changes which their self-assessment reveals to be necessary or desirable. A valuable skill, self-assessment, is learned.	

2 Key benefits and future perspectives in using e-portfolios for assessment

2.1 Sources

2.1.1. Information about the key benefits of using e-portfolios for assessment was drawn from several sources. The case study respondents were specifically asked about perceived benefits and difficulties relating to the practice they described. In addition, they were asked whether any evaluation had been undertaken, and if so, with what findings. Further information giving different stakeholder perspectives was drawn from the telephone interviews with external examiners and assessors and the institutional visits.

2.1.2. In relation to formal evaluation, eleven case studies gave no information or stated that no evaluation had yet been undertaken, although one of these was expecting a formal report shortly and two others were putting procedures in place for the future. Of those remaining, at least six had undertaken formal evaluations with reports published. Other responses came from comments from students in end-of module evaluations and ongoing evaluations which had not yet produced formal reports. The numbers in brackets identify the case study concerned.

2.2 Benefits

2.2.1 Respondents cited a wide range of perceived benefits, referring to both efficiency gains and pedagogical gains. In terms of efficiency, respondents believed that e-portfolio assessment saved time and made both marking and giving feedback more convenient through 24/7 access. It helped tutors and students keep in closer contact and keep better track of progress. In terms of enhancing learning, tutors could spot more quickly those students who needed particular help. Several mentioned that students became more creative, better at reflection and more fully engaged in learning. Some felt that a shared supportive environment was created where students supported each other and the e-portfolio also provided a basis for conversations between tutor and student. In terms of skills for employability, there were several mentions of students having increased confidence with IT, a clearer understanding of how to present evidence to claim competence and a greater appreciation of the value of their own work through presenting it to others.

2.2.2 Nearly all evaluation findings coming from or relating to students were positive. These ranged from a simple ‘enthusiastic’ to some detailed identification of skills students felt they had learned and a claim that student achievement had been significantly raised. Most students preferred electronic to paper when given a choice. Negative comments were rare and mainly concerned initial worries and technical teething problems. One respondent commented that all students now had the necessary ICT skills, two others gave examples of how student feedback had constructively contributed to the development of the system:

> *Enthusiastic ; Students able to suggest refinements and assist staff in developing activities [5]; Very few choose hard copy rather than electronic [6]; Prefer e-version [8]; Level of student achievement significantly raised [9]; Approach appreciated and valued [9]; relevant to organising and*

developing themselves [14]; Most (but not all) enjoyed storing work to look back on, submitting work and receiving feedback electronically; All students have the necessary ICT skills [15]; Changes in timing from student feedback, plus paper copy of summary for appraisal meeting; Students became better at reflection and planning learning: "Brought things together. Made me sum up my overall progress of the year, which was a really nice thing to do. Positive reflection" [18]; Positive step, mainly due to simplicity [19]; positive [25]; Initial reservations about being guinea-pigs and making extra work disappeared, all completed qualification [31]; Some continue to use after completing studies; main problems technical or associated with having to learn several different systems [33]

2.2.3 There were fewer comments relating to staff perceptions, two of which concerned external examiners. Nearly all were positive. It may be that the practice in the case studies was most often implemented by a single tutor or small team, all of whom were already committed to the use of e-portfolios, thus their positive perceptions are taken for granted by the respondent.

Good. No problems [2]; Different levels of staff expertise/confidence [5]; Seems easier to do [8]; External examiners can view work on-line [15]; Positive [25]; External examiners (after some initial trepidation) enthusiastic about the software and the diversity and quality of portfolios [31].

2.2.4. Table 2 (pp. 12-16) provides a matrix which suggests what kind of benefit, both in pedagogical and administrative terms, might arise from the different functionalities associated with e-portfolio tools. At the most basic level, common to all case studies, is the benefit to both learner and assessor of a single storage point for material which is to be assessed. The value of this in encouraging staff to adopt e-portfolio technology should not be underestimated.

2.2.5 We found no specific examples of learners uploading digital artefacts such as images or sound files directly from their mobile phones. Some of the areas where practice is most mature, in health care or education, also pose difficult ethical issues of patient or pupil consent. Nevertheless some tools are designed to accept uploads from mobiles very easily. For example, in the case of the Nottingham Advantage Award which uses PebblePAD [**17**], where the idea of uploads from mobiles was incorporated into design considerations from the beginning, it seems likely that students will make use of this feature in gathering their evidence.

2.2.6 The requirement on students to select appropriate evidence was a very common feature across the case studies. All the programmes which were working to professional standards had some element of choice over the evidence selected. Often an assessment of the appropriateness of the evidence depended on a face-to-face interview or viva, where typically candidates would be expected to justify their claim to the achievement of a sample of outcomes or standards (see for example [**17**], [**18**], [**26**], [**27**] and [**30**]). It was also common in these cases for the tool to give the learner a pre-existing structure, by criteria, outcomes or standards, which helped them to organise and monitor their evidence.

2.2.7 Only one case study specifically mentions the date-stamping of records as a positive benefit. This is the Masters programme in Digital Art at Norwich, which uses WordPress [**25**]. However in some other instances, for example the ICT teachers in North Tyneside [**26**], the fact that the technology records when posts are created enables course leaders to realise that some students are completing their reflective journals at the end of the course rather than making regular entries. This allows the tutors to build in more support and give better justifications for regular posts.

2.2.8 Linking between portfolio items, other than when induced by a pre-organised structure, occurred less often than expected. If this is taken to be an indicator of the technology supporting integration of learning, the best examples came from practice modelled on the Patchwork Text, which requires learners to develop a synthesising reflective summary with links to evidence (see for example [**13**], [**28**] and [**34**]). These provide proof of concept, of a longstanding nature in the case of Anglia Ruskin [**13**]. Certainly the tools specifically designed as e-portfolio systems such as PebblePAD and the Blackboard/WebCT portfolio offer a straightforward way to create such a summary as the portfolio's first page. It is expected that this practice will develop as tutors gain confidence in assessing portfolios holistically, as with the Westminster example [**14**].

2.2.9 Many case studies demonstrate the benefits for tutors in ease of commenting on students' work through the use of technology. Fewer have developed the idea of a community of practice with peers commenting on each other's work. Peer commenting tends to occur where practice has matured and the tool facilitates such connections, as with Wolverhampton's Midwifery course using PebblePAD [**15**]. However, our Foundation Degree case studies ([**1**] and [**2**]) remind us that students may need to build their confidence before willingly sharing their written words with peers as well as tutors. Again, the study from North Tyneside [**26**] shows how mature professionals are able to benefit from such collaboration to develop their practice.

2.2.10 Although many of the tools within the case studies allow multiple presentations to different audiences, no specific instances of this usage were found. This possibly reflects the focus of this study on assessment where it would be rather strange to find a situation where a candidate needed to select different evidence for different assessors, whereas a study of the use of e-portfolio technology for transitions might well find that users tailored their portfolio presentations to the institution or employer to which they were seeking admission or employment.

2.3 Difficulties and challenges

2.3.1 In terms of the responses from our case study authors, some difficulties mentioned were not specifically associated with e-portfolios. One problem equally associated with paper-based portfolios is encouraging students to keep them regularly updated throughout a period of learning, rather than completing them in a rush at the end. E-portfolios do at least offer the possibility of revealing this practice clearly!

2.3.2 The most frequently mentioned difficulties were associated with users' skills and confidence or with technical issues. There were several mentions of both staff and students lacking skills, being fearful of technology or being unwilling to invest the time needed to learn a new system, especially when this was additional to learning the use of the institutional VLE. Technical issues related to system down-time making portfolios unavailable, and problems with the tool itself not meeting expectations – not customisable, unable to handle a wide enough range of media formats, limited file sizes. Some assessors were worried about security and specifically about digital signatures verifying evidence. Others met with unwillingness among their colleagues to change working practices, for example marking onscreen and giving electronic feedback rather than working through a pile of paper-based essays and filling in a paper feedback form. Two respondents had problems with their institution's policy on anonymous marking. Finally at least three respondents suffered from being lone champions in their institution or department which meant a disproportionate workload as well as a sense of isolation.

2.3.3 Without exception, the formal evaluation reports related to the use of e-portfolios on programmes leading to professional accreditation: Law, Social Work, Teacher Education and Medicine. Some of the findings are very specific to the tool used and/or the context of practice. However, some detailed issues are identified which are familiar but still merit wider consideration:

- Students are often reluctant to share work with peers for feedback (although happy to share with tutors) [11]

- Staff, whether academic or practice based (work-based), often have initial worries – 'out of their comfort zone' as one report put it. However, these can fade away quite quickly [12, 31]

- Users' ability and willingness to write regular and meaningful reflections varied enormously, whether or not they used an electronic medium [23, 26]

- Use of the e-portfolio for summative assessment may create additional work for tutors, e.g. work related to assessment processes may be being transferred from administrative to academic staff, students may encounter technical submission problems at the last minute or problems related to not fully engaging with the tool in time for assessment deadlines.

2.3.4 In both professional and non-professional contexts there are examples of the e-portfolio tool being used as little more than a repository for work once it has been assessed. Here, what the tutors seem to value is the sheer capacity of the tools being used to help students to organise their work; having easy online access to students' work for formative feedback; and, in some instances, being able to set reflective tasks which depend on students reviewing their work and the feedback they have received.

2.3.5 Even this relatively minimal use of the tool has practical implications for assessors. Extensive use of hyperlinks makes it imperative that tutors feel comfortable with assessing work onscreen. However, it also makes difficulties in referring backwards and forwards from

standards to evidence, and one assessor actually commented that two screens were ideal, one to display the standards and the other to read and check the evidence.

2.4 Futures

2.4.1 The case study respondents were asked for their beliefs about what would happen next in relation to the practice reported in the case study. We were interested to know about both immediate and longer terms plans. The answer can be summarised in one word – 'more'. Respondents expected to see, at the macro level, more courses, programmes and subjects at Department, Faculty and University level and throughout all academic levels, making use of e-portfolio technology for assessment. They expected roll-out into professional accreditation and CPD, with increased use by professional bodies and employers. This would lead to different forms of e-portfolios to reflect differing academic, professional, commercial and individual needs and priorities. They also foresaw more alumni access to their e-portfolios.

2.4.2 At a more micro level, within modules they expected to see different modes of study (online, blended, distance learning); better training and support for students on using the software; a wider range of media included in the e-portfolio (video, web links, blogs, other forms of student work); more student-generated and student-selected materials; more reflection; more feedback to students; and a sustained use of an e-portfolio, from week one to module completion. They showed a confident and optimistic belief that practice would evolve and improve year on year in light of feedback, experience and hence growing expertise. They expected a greater degree of sharing of portfolios by students and also different forms of engagement by students, such as self and peer feedback and peer tutoring. Increasingly they saw the e- portfolio as a place where work was done rather than as a repository for materials produced elsewhere.

2.4.3 The main drivers for this increase in use were:

- perceived effectiveness of current initiatives;
- growing staff and student enthusiasm based on their own experience and reports from others;
- a growing realisation of the technical possibilities and potential pedagogic benefits;
- and professional body and employer embrace of e-portfolios.

2.4.4 They recognised several factors which would enable such an increase in use and some that might inhibit it. Enablers included more staff development and inter-university collaboration on practice learning using e- portfolios. Some enablers related to the technology itself: technical problems were being solved year-on-year, more choice of available systems would lead to greater cost-effectiveness, more accessible technologies and data formats were replacing proprietary systems, e-portfolio technology would increasingly be able to interoperate with other pedagogical systems such as Turnitin:

> "By going outside [i.e. to external rather than University hosting of the e-portfolio system] we have greater creative freedom, and can design an interface which not only looks good (an important factor, according to our students) but is intuitive and easy to use." Respondent 25.

2.4.4 Potential inhibitors envisaged by the respondents often related to organisational and economic issues. It was recognised that while early and small scale developments could be undertaken by an individual in their personal or teaching time, large-scale rollout does need some academic, administrative and technical support. While not necessarily needing a huge resource, it is not always clear where responsibility for large-scale rollout and its support lies. Changes to University policy, practice and structure can also accidentally impact on the use of e-portfolios. For example, in one university a move to a universal 20-credit module size meant that there would no longer be a place for a 5-credit e-portfolio PDP system – this use of e-portfolio will need to be integrated if it is not be lost. In another, the 2010 closure of the Centre which led the initiative means an uncertain future for e-portfolios. Not surprisingly there was some caution about the use of e- portfolios, some potential users adopting a wait-and-see policy, or waiting for the results of an evaluation:

> "Concerns still remain relating to the integration of the e-portfolio with existing IT systems, confidentiality and ownership of evidence. However the firm intends to continue with this approach. It works well for a larger firm with personnel systems and support already in place, but may not be achievable in a smaller firm"…"The consensus was that...an e-portfolio lying on top of the current [poor traineeship] system would not make any major improvements or bring significant benefits." Respondent 22.

2.4.5. Table 3 summarises the advice offered by practitioners to those considering embarking on the use of e-portfolios in assessment. They cover the whole range of issues raised throughout this report: engagement of stakeholders, careful and purposeful curriculum design, adequate preparation and training, the balancing of enthusiasm and vision with a measured and realistic approach to implementation.

2.4.6 In summary, this report has demonstrated that e-portfolio technology can provide a range of benefits both to learners and to tutors (or to candidates and to assessors). Benefits are both pedagogical in terms of more effective learning and administrative in terms of greater efficiency. Not all of the potential benefits are currently being realised even where the technology has been adopted with enthusiasm, but practice is widespread,varied and growing:

> "Ultimately the use of eportfolio systems can lead to a new pedagogic paradigm, a much more collaborative approach to learning and teaching. But that may take a little longer." Respondent 33.

Table 3: What advice do current practitioners offer?

Involve all major stakeholders in the development and implementation of assessment using e- portfolios. (Comments received from 3 respondents)	"Above all - don't develop it in isolation." [33]; "Include key stakeholders (e.g. students and IT services) early on in order to build their trust and confidence." [31] "Progress has also been achieved by the fact that the School have worked well as a team and been prepared to prioritise the time needed." [20]
Relate the assessment of e-portfolios to the course and to its purpose within the course. (Comments received from 10 respondents)	"Be very clear about e-portfolio specification and purpose" [22]; "Think through the pedagogic design of the module and the integration of formative and summative assessment within in it before considering the use of the e-portfolio tool: which aspects of the learning process need to be enhanced and how will the e-portfolio tool enhance them?" [11]; "Write [the use of e- portfolio for assessment] into the curriculum where possible" [15]; "It is essential to have a small number of clear and specific functional objectives, particularly for those students and tutors who will use it. Add functionalities only if there is substantial evidence that they will be used by students. It is better to add later than to waste time and resources on unused features. Adopt a simple user interface. Use open source solutions to improve data security and save money and time." [19]
Senior management support is essential. (Comments received from 2 respondents)	"Secure time for the development rather than volunteering 1000s of hours." [16]
Ensure that the necessary staffing and resources are available. (Comments received from 4 respondents)	The time of skilled staff will be needed to adapt the course, the learning resources and the technology to achieve their particular necessary functions. "...substantial staff resource will be needed..." [20]; "If using alternative types of digital evidence (e.g. video, sound etc) make sure you and the students know how the technology works and how to include this in an e-

	portfolio" [22]; "...a large and diverse user group creates additional pressures." [24]; "use open source technologies..." [16]
Support colleagues to develop the necessary pedagogic and technical skills (Comments received from 2 respondents)	"Staff need support on how to use the system to enable them to support the students" [7]; "Train the team together" [15]; "Staff should use the system for their own learning" [15]
Use what is already known. (Comments received from 2 respondents)	Use the experience of others, and the literature – on "validity, reliability and rigour in assessment" [9] and on "pedagogies and usability" [33] – accepting that "of course yours will have to work in your particular context" [33]; "See what others have done - there are many e-portfolio systems out there" [33]
Ensure that students see the point, and that they have the technical skills and the learning skills (especially in relation to reflection). Support student collaboration. (Comments received from 13 respondents)	*Ensure students see the point:* "Make sure above all else that the students can see the use and the point of the portfolio. It must in some tangible and explicit, immediate way, benefit their degree and their future" [1]; "When you're introducing the e- portfolio, whether to staff or to students, give lots of examples of what might go into a portfolio" [10] ; "Make sure that the participants know why they're doing it because it IS different, the whole pedagogy is different" [26]; *Ensure students have the technical skills…* "Students need training. Build it into modules at each level and refer to it often" [7]; "Don't make assumptions about the level of IT skills that programme participants bring! Check participants' IT skills, or give them the tools to check their skills for themselves. And then provide appropriate support" [28]; *… and the learning skills, in particular reflection*

	“Start slowly - it takes time to learn how to reflect. However, given time and support, students become skilled at reflection, and come to value it“ [10]; “Give them tools to aid reflection - questions, forms, checklists. Initially, until they 'get it', many students need to start with a very prescriptive approach to reflection“ [10]; “Being asked to reflect at 18 /19/20 is really hard” – and ask “is what you are asking them to do deliverable within the time frame and the resources they have personally?“ [14] *Support student collaboration* “It's good to encourage students to share and co-operate. However they are often reluctant to do this, seeing the course as a competitive business” [10]; “Peer support is helpful“ [22]; “Engage peer mentors amongst the student body” [14]; “In the area of professional/personal development there is an initial reluctance to share thinking with other students…. However at some point learners realise the potential power of sharing to enhance their learning and wish they’d tried it” [27] *Other* “Monitor student responses as early as possible” [4]; “Advice for students just starting – regular entries are important, keep the portfolio up to date, time/plan efficiently, little and often, don’t leave it till the last moment, think about how you want to structure your final portfolio, you don’t have to spend hours on the project but spending a few minutes evaluating each piece of work will help you understand areas where it can be improved” [10]; “Provide lots of guidance and a structure in the initial stages of how to start building the e-portfolio – a timetable and list of essential elements (mixture of reflective and evidence) that must be included, for example“ [14]
Encourage and support student creativity within the eportfolio. (Comments received from 2 respondents)	“Encourage as much creativity as possible” [14]; “Give them tools with which to be creative, and encourage them to let their personality come through in their portfolio” [14]; “Once the students have got the idea, they start to come up with their own approach – be prepared for lots of variation in what you see.” [22]

Apply what is known about good practice in any form of assessment to the assessment of e- portfolios. Comments received from 3 respondents)	"Use well-defined criteria, and make these explicit to students and assessors" [17]; "Make sure the feedback is useful and that the timing and the design of assessments make it possible to use the feedback" [19]; "Allow alternative models [of assessment] and range of assessment tools." [22]
"Just do it"… (Comments received from 6 respondents)	This view is summarised as "Try it. It works!" [2], and "Get on and do it!" [21]. Courage, patience, enthusiasm, experimentation, creativity and planning are required [6, 30, 31]. It is a versatile process [30]. Also, "...it's fun, and the students may surprise you with their accomplishments!" [9]
…but with adequate preparation! (Comments received from 3 respondents)	On the other hand, "Don't expect just to jump in and succeed!" [18] "You need to know why you're doing it, what you want to get out of it" [18]; "Start slowly" [22]; "Building-up use of the technology gradually without setting-up unrealistic expectations has been beneficial" [29]
Review progress often, and act on the results of the review (Comments received from 4 respondents)	"Evolve the work incrementally, informed by feedback from students and from colleagues" [19; "Regular reviews and feedback are essential" [18]; "Continue to review practice, not just at the end of every run of the course but all the time, and make necessary changes as soon as they can be made". [19]; "If something does not work let it fall out of the process – allow the students to do the work that is relevant to them." [14]
Embed over time (Comments received from 3 respondents)	"Eportfolios should over time permeate the course, and become part of the infrastructure, used everywhere" [28]; "The eportfolio should also become a long-term part of the student's academic and professional life, something they take value highly and take forward into work" [28]; "After three years of using the e- portfolio for appraisal, students go on to make even more substantial academic use of it in year 4" [18]

3 Analysis of practice

This chapter offers a way into the themes and issues raised by the case studies, by taking cognate examples of practice, by level or discipline, to compare and contrast. In the first section, the themes and issues arising from the comparisons are summarised. Following this are more detailed analyses by different groupings. The groupings relate to: foundation degrees; HE levels 1 and 2 where the practice primarily supports personal development planning (PDP); learning technology-related programmes; education programmes both as in initial training for teaching in schools and in-service training in HE and FE; other professional programmes (Law, Social Work, Medicine, Midwifery); arts-based programmes; and practice related to developing employability. The chapter ends with some individual accounts of more or less successful experience which did not constitute case studies of practice but yielded valuable insights into why practice fails or succeeds.

3.1 Themes and issues

3.1.1 Around half of our case studies show e-portfolio tools being used on professionally accredited programmes. There appear to be two distinct drivers for the uptake of e-portfolios on these programmes: the need to organise the collection of evidence required for professional accreditation and the desire to develop students' capacity to be reflective and independent learners. Where the emphasis is laid does seem to dependent heavily on the attitude of the professional body. For example, the M.Pharm programme at Strathclyde [**20**] links the use of the e-portfolio to the requirements of the professional body, the Royal Pharmaceutical Society, that accredited programmes produce graduates who take 'personal responsibility' for learning. This has prompted the development of a Personal Skills Development module to which the e-portfolio is linked. Its use in this context is similar to the Year 1 undergraduate PDP case studies (see section 2.2).

3.1.2. In contrast, our PGCE (Schools) examples, in particular [**30**], [**31**], and [**32**] emphasise the organisation of multiple bits of evidence against a large number of professional standards. The evidence itself might well show the student reflecting, as in an extract from a group blog, but the real value of the portfolio tool appears to be in tracking and organising, both for the student's sake and for the assessor's.

3.1.5. We found very few examples of e-portfolio use in assessment where any stress was laid on the presentational aspect of the tool. Only those programmes which explicitly harked back to the Patchwork text model ([**13**], [**28**], and [**34**]) seemed interested in how learners selected evidence to present a claim for their learning. Even here, the prime interest of the assessors lay in the quality of reflection shown in the assignment or piece of writing which synthesised the learning and the quality of evidence in the 'patches' rather than in any overall impression gained from the presentation within the e-portfolio tool. However there were examples where students were explicitly encouraged to use the technology to help them think about how to present themselves to employers (see for example [**14**] and [**17**] and sometimes the assessment process culminated in a presentation which drew on the e-portfolio (for example [**26**]). It is noteworthy that the ePET tool ([**18**], [**27**], [**30**]) seems to lend itself best to a scenario where the user/learner presents evidence at a face-to-face review with an assessor, which is still the case with its use in medical education at Newcastle. It is unlikely that every single piece of evidence will be checked at this meeting but the assessor

and student can easily locate specific items for discussion. An overall summative judgement is not so easy to make.

3.1.6. There is a tension in some case studies between structure and learner self-expression. This dilemma was well summed up by one of our 'story' respondents (see para. 3.10.3.) for whom unstructured portfolios were 'a nightmare to assess'. Again it is noteworthy that the most popular tool found in this survey, PebblePAD, in response to customer demand has moved in the direction of offering more templates to structure activity. Templates help learners to know what to put into their e-portfolio and thereby reduce the variability for markers, making their job easier. What may be lost in the process is a sense that the e-portfolio is expressing a unique identity with a personal message to communicate which differentiates that learner from his or her peers.

3.2 E-portfolios at Foundation level

1	Portsmouth University	Early Childhood Learning, Educational Administration, and others	Foundation Degrees, all years Professional Development Unit	Formative and summative	WebCT
2	City of Sunderland College	Service Management	Foundation Degree, Year 2 40-credit PDP module	Formative and summative	BB

3.2.1 Our case studies include two instances of Foundation degrees, at Portsmouth [**1**] and Sunderland [**2**]. In both cases, the focus of interest is on 40-credit integrative modules, called Personal Development Planning in Sunderland and the Professional Development Unit (PDU) at Portsmouth. Further information on the development of the PDU at Portsmouth can be found in Lyons and Buckley (2009). A common feature of both courses is the emphasis on naturally-occurring opportunities in the workplace to develop skills and collect evidence.

3.2.2 Another similarity is the relative lack of emphasis on peer support as opposed to tutor-learner dialogue. Portsmouth students seemed reluctant to share their written work with each other, apparently through lack of confidence in its worth. Sunderland stressed the support which tutors could give learners through the e-portfolio system but were not looking to extend into providing facilities for social networking or peer feedback.

3.2.3 Sunderland had experience of using a paper portfolio on its Foundation degree in Service Management. The switch to electronic appears to have been motivated by a desire to extend the range of evidence learners could collect:

> 'the e-portfolio increased the flexibility of use and diversity of evidence that could be collated to show PDP activity. For example, web links, digital images, pod cast and video casts. It also enabled the learners to be more creative in their approach in setting PDP goals and objectives'.

3.2.4 At Sunderland, the introduction of e-portfolios for a clearly delimited purpose appears to have been successful. They are happy for dialogue to be between learner and tutor only.

They are positive about the experience of using the e-portfolio – ‘easier for the learner to use and be more creative, easier for the tutor to keep in contact with the learner and support their learning’ - and intend to spread its use to other courses.

3.3 Supporting reflection and personal development planning

3	Wolverhampton University	Sport, Performing Arts and Leisure	Level 1 u/g module for dance students	Formative and summative	PP
4	Queen Margaret University	Media, Communications and Sociology, Psychology	Year 1 u/g ‘Study and IT Skills’ 10-credit module	Summative	PP
5	Oxford Brookes University	Business	Year 1 u/g 15-credit module 'Intercultural communication'	Formative and summative	PP
7	Liverpool John Moores University	Sports Science	Modules in u/g Years 1 and 2 Sports Development	Mainly formative	BB
8	Wolverhampton University	Construction/ Management/ Engineering	Level 1 u/g module 'Communication and Research Methods'	Formative and summative	PP
9	Northumbria University	Business Information Systems/Business Information Technology	Year 2 u/g Professional Development module	Formative and summative	BB
11	Sheffield Hallam University	Applied Social Science	Years 1-3 u/g in three 20-credit modules	Formative and summative	PP

3.3.1 It was not surprising, in view of the strong link in UK higher education between personal development planning (PDP) and the use of e-portfolios (Strivens 2006), that several of our examples showed the use of e-portfolios to assess modules intended to deliver PDP in a range of subject areas. Often these are Year 1 modules: examples are Oxford Brookes University (OBU)(Business Studies) [**5**], Wolverhampton University (Dance) [**3**]; Liverpool John Moores University (LJMU) (Sports Science) [**7**], Sheffield Hallam University (SHU) (Applied Social Sciences) [**11**] and Queen Margaret University (QMU) (Media, Communication and Sociology and Psychology) [**4**]. In the programme for part-time students in Hong Kong offered by Wolverhampton [**8**], the e-portfolio is used in a module in the second year but this is the first year of degree-level study for the students. The emphasis is heavily on developing the students’ capacity to reflect and become independent learners.

3.3.2 A Year 2 module at Northumbria University(Business Information Services/Technology) [**9**] aimed at preparing students for the third year of industrial placement and a Year 2 module at SHU [**11**] based around work experience have similarities to these year 1 modules in their focus on reflection and the development of transferable skills. LJMU encourage students to use the e-portfolio for their Year 2 Work-Based Learning module but do not assess this.

3.3.3 Tutors interpret PDP differently through choosing different learning activities. At OBU the two main elements are a Personal Action Plan and 'reflections' on group discussions at

workshops throughout the year and collaborative online activities. Year 1 Dance students at Wolverhampton write a piece 'About me', another piece which explores differences between journalistic and academic writing and a final essay intended to bring these first two pieces of writing together, called 'Becoming an Independent Learner'. At Wolverhampton the assessment criteria are graded A-E and refer most explicitly to the qualities of academic writing. At QMU the 10-credit module is called 'Study and IT Skills': among a series of other activities they are expected to make a series of blog entries which are shared with their tutor and assessed on their ability to reflect on their studies and university experience. All three institutions are using the same system (PebblePAD) and all use the blogging facility.

3.3.4 At Northumbria University a 10-credit module aims to prepare Year 2 (Level 5) students for the recruitment process for their industrial placement year. The e-portfolio is required to contain the application documentation, a personal statement reflecting on learning progress and goals, reflective commentaries on the experience of mock interviews, evidence of the job-search process and of achievements which support the application. The students' abilities to analyse and reflect on their learning are a key assessment criterion (see Fig. 1).

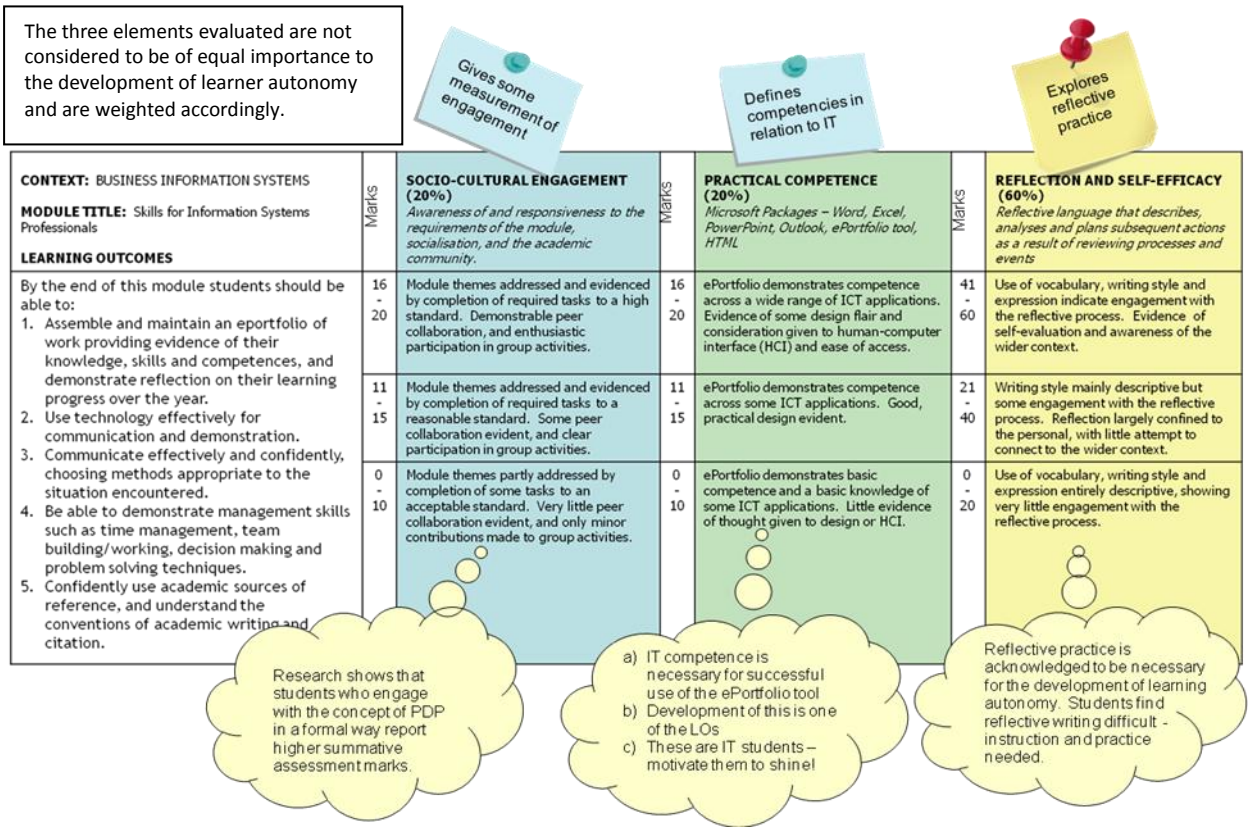

***Figure 1**: Taxonomy for the assessment of PDP/e-portfolios (Northumbria University)*

3.3.5 SHU has core 20-credit modules. In Year 1, 'Social Science Foundations (SSF)', a skills and support module, aims to 'support students in the transition to higher education to gain the academic and personal skills necessary for undergraduate study'. In Year 2 , 'Work and Professional Development" (WPD) draws together academic and work-based learning. Activities in SSF are: (Semester 1) student assessment of their group presentation and the skills they developed in preparing and delivering it; student evaluation of the sources used

for the presentation; referencing and bibliographic skills, and (Semester 2) student analysis of the feedback they receive from Semester 1 assignments; action planning in response to feedback; reflection on the appropriateness and success of the action plan; and preparation of a hand-out for new students advising them of the difficulties of, and strategies for coping with, the transitions to higher education. In WPD the activities are a report on the work experience placement, and the journal with reflection on academic and personal skills developed during it. SHU also uses PebblePAD.

3.3.6 Like Northumbria, SHU uses only three grade classifications - *pass* (40.00 -55.99%), *merit* (60.00 – 69.99%) and distinction (70.00-100.00%) - for an Ordinary Degree, with a more complex, four-grade system for an Honours degree. This is probably an accurate reflection of the extent to which discriminations can be reliably made in assessment judgements about this type of work. For the WPD module, there are some general criteria of completeness and presentation, structure and coherence, but four focus directly on the quality of the reflection (see Table 2: the description are for the highest grade).

Page 1 Work Experience Contact Details	Clear account of work experience
Page 2 Reflection: Skills	Clear appreciation and communication of what the student has learned from work experience. Good use of supporting materials. Well presented work experience log.
Page 3 Reflection: Applying Theoretical Perspectives	Clear evidence of wide reading. Sophisticated understanding of theory. Strong ability to relate theory and work experience in both directions.
Page 4 Reflection: Developing Sector Knowledge	Student has demonstrated substantial knowledge of sector in which they have undertaken work experience. Good use of supporting materials.
Page 5 Reflection: Enhancing Employability	Student has a good understanding of the concept of employability. Student shows ability to assess critically and objectively their own skill development. Good use of supporting materials.
Structure and coherence of argument	The arguments are well structured and coherent. All parts of the question are answered.
General written style, presentation, spelling, grammar etc.	Accurate grammar, punctuation and spelling; clear written style.

Table 2: *Sheffield Hallam WPD: Assessment criteria for assignment 2 Webfolio*

The assessment criteria for the e-portfolio portion of the Level 1 SSF assessment focus on *Analysis of progress*[14]; *Development Strategy*[15] and *Strategy Evaluation*[16] (the descriptors in the footnotes again applies to the highest level of performance, Excellent).

[14] *Describes, analyses* and *evaluates* academic progress in detail, supporting claims with *evidence, applying* module learning outcomes and *synthesising* feedback from Semester 1.

3.4 E-portfolios in learning technology programmes

13	Anglia Ruskin University	Learning Technology	BA in Learning Technology and Research	Formative and summative	Plone
33	Open University	Educational Technology	MA in Online and Distance Technology 30-point module 'The e-learning professional'	Formative and summative	Purpose-built: (MyStuff)
34	University of Bolton	Master in Learning Technology	Interdisciplinary Degrees in Inquiry-Based Learning	Formative and summative	Free choice

3.4.1 We found three instances of the use of e-portfolios in programmes which were designed to teach about learning technology: the Open University (OU) [**33**], Anglia Ruskin University [**13**] and the University of Bolton [**34**]. The OU and Bolton programmes are at Masters' level, Anglia Ruskin's is at undergraduate level. Both the OU and Anglia Ruskin programmes are well-established: the Bolton programme is new but has been developed directly from the curriculum model which informs the Anglia Ruskin programme.

3.4.2 In the OU module H808 'The e-learning professional', one purpose in introducing the e-portfolio was to familiarise students with the technology, given its fast-growing use. The other two foci of the module are reflection and professional development. Two of the three assignments require participants to have developed and reflected on the process of compiling a portfolio of evidence, but do not assess the compilation itself. The third assignment has three assessed components: a compilation of material drawn from the e-portfolio, a reflective commentary on the participant's personal and professional development, referencing individual pieces of work, and a critical essay. In contrast, both the Anglia Ruskin and Bolton programmes are structured by individually negotiated learning contracts with each student. The compilation of assignments relates to the evidencing of learning outcomes agreed in each learning contract.

3.4.3. In the two well-established programmes at the OU and Anglia Ruskin there has been some experimentation with tools, as is appropriate for programmes concerned with e-learning and learning technologies. The OU used the ePortaro system in its first year, a variety of systems in its second year and now uses MyStuff, the OU-developed e-portfolio system which is a module in Moodle, the OU's VLE. Anglia Ruskin started with a home-built set of tools but now uses PLONE as its main e-portfolio tool, supplemented by the students' use of social networking sites. The high level of technological awareness of staff on such courses is clear from our respondents' comments on the technology:

[15] Locates an *academic* skill and a module on which to focus and explains why these have been chosen, linking the choice to the analysis of progress; Develops a strategy for improvement which draws on existing skills and identifies all those that need to be developed; takes account of the module learning outcomes and assessment tasks; proposes a logical course of action with clear stages of development; Charts progress through a learning blog or diary.

[16] *Evaluates* the success of the development strategy, *identifying* and giving *evidence* of the skills that have been developed and those that need further work. *Describes* and *assesses* the use of the e-portfolio tool and its potential for supporting support personal, academic and professional development in the future.

> ‘(PLONE) does not permit seamless anonymous marking and…(to achieve this) it is necessary to undertake some technical tweaking. Philosophically we would have liked dialogue/community and e-portfolio to have been more closely linked. While PLONE permits dialogue our students have tended to pull towards other platforms for dialogue’; ‘ePortaro…was designed primarily…to enable portfolio owners to demonstrate their skills, competencies, personality and mastery to third parties and to help portfolio owners to reflect on connections between apparently different accomplishments. It offers a very highly pre-structured approach, with lots of templates…it makes extensive use of folders and hierarchies. It was not found to support the pedagogy of connections and relations we wanted…MyStuff does not use folders. Rather it encourages multiple tagging of items as a basis for organising and making connections’.

3.4.4 Bolton’s Master’s programme in Educational Technology sits within a generic curriculum validation framework which has been developed for use across the university, the framework for Interdisciplinary Inquiry-Based Learning (IDIBL)[17]. This framework is described in more detail in Chapter 5, Section 5 (pp. 51-53). The framework is particularly suited to work-based learners wanting to pursue higher education studies which are directly relevant to their workplace, but the underpinning pedagogical principles are broadly applicable. The flexibility of the framework accommodates learning through levels 4-7 and with a wide range of disciplinary content, of which the Master’s in Educational Technology is one instance.

3.4.5 The intention of the Bolton programme is to allow participants a free choice of the technology they use to present their work. Like Anglia Ruskin, the inspiration for the design of the programme is the Patchwork Text project[18] and subsequent work. Students create ‘patches’, a variety of short pieces of work related to their agreed learning goals (the learning contracts containing these are displayed in Googledocs for students and staff to share). The final submission consists of a reflective piece of work which ‘stitches’ the patches into a coherent account of the student’s learning, allowing them to decide on their best and most illustrative work and how this is best presented. E-portfolio technology lends itself readily to supporting this form of curriculum design, and several other case studies make reference to the Patchwork Text idea as an inspiration for their practice.

[17] See http://idibl.bolton.ac.uk/

[18] The “Patchwork Text” is a concept developed in a joint research project between Anglia Polytechnic, Cambridge and Nottingham Trent Universities from 2000-2003. As an assignment, it is built up gradually through a series of writing tasks over a period of weeks, shared with other students in small group discussions, ultimately unified by a reflective synthesis. The Patchwork Text is defined by Richard Winter (1999) as *“a general name for written texts where the unifying structure is not simply a linear narrative but a series of loosely-linked pieces illustrating a theme or gradually building up a set of perspectives”* (pg. 67).

3.5 E-portfolios linked to professional accreditation: Law, Social Work, Medicine, Midwifery

10	Westminster University with UKCLE	Law	Year 3 u/g Work-based learning module	Formative	PP
12	Staffordshire University	Social Work	BA in Social Work	Formative and summative	Purpose-built (SWEAP)
15	Wolverhampton University	Midwifery	B.Sc in Midwifery	Formative and summative	PP
18	University of Newcastle	Medicine	MBChB (5-year undergraduate medical degree) Years 1-3	Required, not graded	ePET
19	Wolverhampton University	Social Work	MA in Social Work module 'Principles of safe practice'	Formative and summative	PP
20	University of Strathclyde	Pharmacy	4-year M.Pharm	Formative and summative	
22	Glasgow School of Law with UKCLE	Law	Postgraduate vocational course (Legal Practice)	Formative only	PP
23	Oxford Institute for Legal Practice with UKCLE	Law	Postgraduate vocational course (Legal Practice)	Formative only	ELGG with Moodle
24	NHS Scotland	Medicine, dentistry, pharmacy, nursing, health administration	Postgraduate training initially: spreading to u/g	Formative and summative	Purpose-built

3.5.1 Almost half of our case studies demonstrate the use of e-portfolios linked to professional accreditation at various stages of development: Law [**10, 22, 23**]; Social work [**12, 21**]; Medicine [**18, 24**]; Pharmacy [**20**]; [Midwifery [**15**]; and Education [**26 to 32**]. The Education case studies are discussed separately in Sections 2.5 (FE and/or HE) and 2.6 (Schools)..

3.5.2 Law and Social work are both professions which have moved towards outcomes-based accreditation with significant skills-based elements, but have not yet achieved over-arching agreement across professional bodies and training institutions throughout the UK. There are two distinct variables here: skills may be developed and / or accredited in the workplace and / or in the University. Social work has perhaps the stronger tradition of portfolio assessment and work-based placements are central (at least 200 days) to its initial training programmes whether at undergraduate or Masters level. Law by contrast has traditionally taken a proportion of students who do not intend to proceed to a career in Law. However, recent changes to the requirements for a Qualifying Law Degree - that is, a law degree whose graduates meets the knowledge and skills requirements of the Law Society and Bar Council in England and Wales – do require the development of a defined set of professional and academic skills, and some universities are using portfolios and e-portfolios to assess these skills. There remains no requirement for workplace experience in initial Law training programmes. However, a recent report comments:

> ‘Law schools have a long history of relatively informal linkages with the profession, ranging from ad hoc participation in validation and review processes, individual arrangements such as part time teaching, and judging moots and debates, to shadowing opportunities for staff and sponsorship of events, resources and academic posts. In addition, a growing number of law schools are building forms of work experience into the formal curriculum, and while most of these activities will not have been designed for that purpose, pro bono and similar activities provide a potential mechanism for employer engagement’ (Webb 2008).[19]

Nevertheless the report concludes that currently ‘there also appear to be few structural incentives or other mechanisms, either within the professions or within universities and colleges, to encourage practitioners to engage systematically with higher education institutions.’

3.5.3 In terms of skills beyond those referred to above, the same report found very little ‘detailed evidence of the range of higher level skills and knowledge areas that employers want from law graduates’: what existed related mostly to the solicitors’ profession rather than to the Bar: ‘there appeared to be strong support within the profession for the existing seven foundations of legal knowledge (specified in the Solicitors Regulation Authority’s Guidance for providers of recognised law programmes [20])…(but) little evidence of consistent preferences outside this ‘core’ area.‘ Thus ‘the package of knowledge and skills developed by students is an aspect of professional formation over which law schools have some control’. This lack of profession-wide consensus may explain the direction taken by the HEA Law Subject Centre, UKCLE in the JISC DEL2 series of projects.

3.5.4 UKCLE worked with four institutions, two at postgraduate and two at undergraduate level, to pilot the use of e-portfolios. Each institution used different tools and defined their own content. Of the two postgraduate institutions (closer to employers and employment), Glasgow Graduate School of Law included skills audits, a personal statement and ‘critical incident’ reports. The ‘Attributes of a good lawyer’ exercise required students to select five attributes and consider how they were going to develop them. Against each attribute evidence could be uploaded. The critical incident report was structured to prompt reflection, and reflection was also required in relation to the development of chosen attributes. Oxford Institute of Legal Practice provided a generic reflection template to complete with each piece of work the students did.[21] Students’ reactions suggested that they perceived the value of the e-portfolio to support job applications (the profession usually uses on-line application). However, this made them wary of using the tools for the very different purpose of recording their areas for development and reflecting on how to improve, especially given the fierce competition for jobs, often against fellow-students.

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[19] See *What do employers want? Employer preferences and engagement in legal education, at* http://www.ukcle.ac.uk/resources/employability/research.html

[20] See http://www.sra.org.uk/documents/students/academic-stage/academicstageguide.pdf

[21] See http://www.ukcle.ac.uk/resources/ict/oxilp.html

3.5.5 The genesis of the Social Work Evidence and Assessment Portfolio (SWEAP)was different. The tool was commissioned by the Skills for Care (West Midlands) Learning Resource Network and piloted with Staffordshire University on their BA Social Work programme and with Shropshire Local Authority. This underlines the need for collaboration between universities and placement providers within this profession's initial training. SWEAP was designed to facilitate 'collecting, reviewing and developing evidence from practice settings to meet the assessment requirements of the social work degree programme'. It also facilitated communication between learners, practice teachers, university academic tutors and , where relevant, employers.

3.5.6 While the social work students appreciated the simplicity of the SWEAP system, there was some resistance from practice assessors who had been comfortable with paper portfolios. Employers in law practices did not raise issues about IT skills but were concerned about the benefits of keeping portfolios in relation to the time spent on them. Some perceived paper portfolios to be less of a security risk.

3.5.7 Both the Law and Social Work professions are extremely security-conscious. This appeared to lead to some resistance, particularly from employers, to e-portfolio use. Mention was made by our respondent of a general level of suspicion caused by media stories of data losses, leading for example to employers insisting that only USB sticks purchased from or configured by them could be used with their systems. Law students 'were very concerned about privacy and wanted to be able to choose levels of access to their portfolio - for example, they wanted to be able to ensure that employers could see only pieces of work showcasing their talents.' In contrast, the social work portfolio was designed to be accessed freely by practice teachers and tutors without student permission.

3.5.8 In both Law and Social Work continuation of current e-portfolio practice among our respondents was under some threat from the conflict between institutional decisions about technology versus discipline/profession-specific choices. Just as SWEAP has started to become established at Staffordshire, the institution has made a decision to move to PebblePAD, which will require the configuration of that tool to perform the same functions as the bespoke platform. This year, practice has not continued pending this changover. At Westminster, the funding from UKCLE allowed the Law lecturers to determine that PebblePAD was preferred to Blackboard by the students: however Blackboard is the institutional tool and no finance is available for the licences for PebblePAD. No decision has yet been taken about what the students are to use on the module starting in January 2009.

3.5.9 Medicine seems to be somewhat further ahead than either Law or Social Work in its use of e-portfolios. This may be due in part to common standards for medical training across the UK. The bespoke portfolio developed by NHS Scotland (also widely used outside Scotland) resembles the thinking behind SWEAP. It is primarily a tool for monitoring progress and storing evidence. There is some recognition, very much as a secondary purpose, of the value of reflection: 'the extent to which…reflective exercises, the use of significant event analysis or other activities related to personal and professional development are integrated into the curriculum depends on the disciplinary area and the orientation and attitude of individual supervisors'. Students are not able to solicit feedback

from peers. In contrast, the ePET tool[22], originally developed to support undergraduate medical education in Newcastle, is stronger on providing the scaffolding for reflection. Its latest manifestation (with the incorporation of the blogging function) also recognises the value of the learning community and the use of community discussion as evidence. Neither tool is intended to be used for direct job application through online self-presentation: they are designed for use in training and accreditation.

3.5.10 Our midwifery case study is a mature example of the use of e-portfolios for the gathering of evidence towards accreditation in the Allied Health professions. The e-portfolio evidence relates to the clinical placements which run throughout the programme and must demonstrate achievement of the placement learning outcomes. The Allied Health professions have been some of the earliest adopters of portfolio practice, particularly to capture the learning from clinical experience on placement, where the learning environment is potentially rich but often chaotic and unstructured. Students frequently find it difficult to abstract meaningful learning and relate what they experience in the real world of the clinic to the more theoretical study within the university. Portfolios can help them analyse their experience by providing structured support for reflection. E-portfolios extend this support by allowing learners to share their experiences and seek counsel from peers, as well as facilitating three-way dialogue between academic tutors, clinical supervisors/mentors and the student.

3.6 E-portfolios for the development and accreditation of lecturers

27	Gateshead College of FE	Education (FE)	PGCE for FE lecturers and trainers, public service trainers and private training providers	Formative and summative	ePET
28	University of Cumbria	Education (HE and FE)	PGCEd for staff	Formative and summative	PP
29	University of Aberdeen	Education (HE)	PGCertHE for staff Both 30-credit modules	Formative and summative	WebCT

3.6.1 We found three examples of e-portfolios being used to assess FE and/or HE staff on programmes aimed at developing and accrediting their teaching: the University of Aberdeen [**29**]; the University of Cumbria [**28**]; and Gateshead College of Further Education [**27**]. At Aberdeen the adoption of an e-portfolio tool for the assessment of the PGCHE was a natural development from a more general interest in the use of e-portfolios to support PDP and other learning activities at the university. At Cumbria and Gateshead the driver was JISC funding, for the Flourish[23] and ComPort[24] projects.

[22] See http://www.eportfolios.ac.uk

[23] See http://www.jisc.ac.uk/whatwedo/programmes/usersandinnovation/flourish.aspx

[24] See http://www.jisc.ac.uk/whatwedo/programmes/elearningcapital/heinfe/comport.aspx

3.6.2 The primary motivation at both Aberdeen and Cumbria appears to have been ease of administration on programmes where paper portfolios were already established:

> 'large paper portfolios need a lot of storage room, are difficult to handle and their movements need to be tracked to avoid risk of loss: Also logs need to be kept of what has been handed in'… '(an e-portfolio is) a convenient tool for sharing assignments and soliciting feedback…more convenient than emailing individual assignments to tutors and particularly benefits students based at remote sites.'

3.6.3 Paper portfolios were also established at Gateshead and the students themselves were requesting a move to an electronic version. Staff were conscious of the importance of modelling good practice: 'The time is rapidly approaching when every learner will expect to develop and maintain a repository and reflective diary which evidences their learning – and so it must be the job of teacher training programmes such as ours to make sure that teaching professionals get the habit and get it early'. Specifically the staff hoped to address the problem that students failed to keep a regular 'learning diary' as required, tending to leave its completion until final submission: 'it was hoped that the online diary might increase motivation to keep a more regular record of their thoughts and feelings'.

3.6.4 Aberdeen use their WebCT tool for the submission of individual assignments. Students (in this case Aberdeen's staff) are not assessed on a collated portfolio nor are they expected to link items in their portfolio with, for example, reflective exercises. Cumbria in contrast has built reflection into the format of the assessment, influenced by the Patchwork Text model of curriculum design (see para. 3.4.5). In particular, the module 'Enhancing Learning in Higher Education' which will include teaching observations from Academic Year 2009/10 onwards and currently has short pieces of writing on, for example, inclusive assessment, flexible and distributed learning and practitioner research, requires a reflexive commentary to 'stitch together' the pieces.

3.6.5 Both Aberdeen and Cumbria encourage peer feedback on work at this level. Cumbria's tool, PebblePAD, facilitates this. Aberdeen would like to be able to insert feedback or annotate documents directly into the e-portfolio but at present provides feedback via e-mail. The Aberdeen staff are aware that their existing tool has functionality that is not yet being used but they are happy to proceed slowly 'with a light touch and minimal planning…informed by a developmental, experimental approach that has not set up any unrealistic expectations, but has resulted in positive results which can inform future incremental development'. Gateshead's learners have been more cautious:

> 'In the area of professional/personal development there is an initial reluctance to share thinking with other students…as a result, following the mantra about personal ownership, it is not pursued. However at some point learners realise the potential powr of sharing to enhance their learning and wish they'd tried it'

3.6.6. Gateshead feel they have learned much from their first trial of e-portfolio use, particularly about the need to support learners' IT skills and develop their confidence with the

tool through staged opportunities to use the tool. They remain enthusiastic about the concept, but face an immediate problem that FE teachers receive their licence to teach from the Institute for Learning. This body has an online tool called 'Reflect' (a customised version of PebblePAD) and may require FE teachers to use this for recording their professional development. Colleges currently using other tools face the prospect of tutors having to re-learn new systems, and may need to take some difficult decisions in relation to using different tools for students on the same course but with differing professional requirements.

3.7 E-portfolios in teacher education (schools)

26	Northumbria University	Inservice ICT teachers in schools	Professional Development Award for serving teachers	Customised commercial platform
30	Newcastle University	(PGCE) English and Drama in 2007-8, ll 13 p programmes in 2008-9	Required, not graded	ePET
31	Liverpool John Moores University	(PGCE) All 10 subject groups	Summative (100%)	Purpose-built
32	University of Southampton	PGCE Four subjects: IT, Geography, Science and RE	Required, not graded	Purpose-built

3.7.1 There are three examples of e-portfolio use in the assessment of initial training programmes for school teachers, the Postgraduate Certificate in Education (PGCE) programmes: at Liverpool John Moores University [**31**], the University of Southampton [**32**] and the University of Newcastle [**30**]. The programme at Northumbria [**26**] for serving teachers provides a contrast. The tool being used at Newcastle is the ePET system which is an Open Source product developed at Newcastle; LJMU and Southampton are using bespoke systems. All PGCE courses are conducted within the framework of the Professional Standards for Qualified Teachers[25] set by the Teacher Development Agency (TDA). There are 33 standards covering the three areas of professional attributes, professional knowledge and understanding and professional skills. All standards must be met before a student teacher is granted NQT (newly qualified teacher) status. All three e-portfolios are structured by these 33 standards, with a requirement that the student uploads evidence against each standard.

3.7.2 The three institutions are at different stages: Southampton has been using their system for some time, both LJMU and Newcastle piloted their systems with one or two groups in the last academic session and are rolling out to the whole cohort this year. However, LJMU has always had a portfolio approach to the assessment of the course and the current e-portfolio is 100% of the assessment requirements, whereas in Newcastle and Southampton the e-portfolio is an additional ungraded requirement alongside other, graded, assessment tasks.

3.7.3 Motivation for adopting an e-portfolio was different in the three institutions. As previously mentioned, LJMU's course was already assessed by a portfolio: the designer of

[25] See http://www.tda.gov.uk/upload/resources/pdf/s/standards_qts.pdf

the e-portfolio was an alumnus of the course now having become a lecturer after having set up his own IT business. He was an enthusiast for learning technology. The primary driver for Southampton was efficiency for both staff and students. The perceived need was for an assessment environment which was 'protected, easy, open, secure' and had 'free access to locally stored folders'. As well as simplicity and minimal programming, accessibility to school teachers was a key idea (which ruled out the University's commercial, licensed product: 'The Electronic Portfolio System...provides our teacher trainees and students with easily accessible space to save work they wish to submit for examination. EPS enables tutors and mentors to access trainees' and students' work for review and assessment from any computer attached to the internet'. At Newcastle the tool existed, its use was well established in medical education and with career researchers, and the PGCE course was an obvious next development.

3.7.4 None of these three tools is concerned with presentation of self, in the sense of learners selecting and presenting their own story. The emphasis is strongly on the collection of evidence and the quality and coverage of that evidence. The ePET tool at Newcastle allows the student a (very long) pre-structured web page to summarise their evidence against the TDA standards but this page is not customisable. LJMU is concerned to ensure that external examiners can easily access the material in the students' portfolios but again, the emphasis is on the material itself and the quality of the evidence. This contrasts quite strongly with other practice, not collected here: the portfolios of education students at the University of Maastricht spring to mind, as does the work of Julie Hughes' education students at Wolverhampton, referenced in *Effective Practice with e-Portfolios.* Here the students present themselves and their evidence through a 'home page' which the reader/assessor comes to first when accessing the web link, the evidence thereby being explicitly mediated through the individual presenter.

3.7.5 All three systems can handle a range of digital media, but LJMU places a special emphasis on the value of video recording of classroom practice. Our contact (who also designed the system) was emphatic in stressing the value of triangulated evidence of students' practice that this afforded – even to the extent of allowing the university tutor to re-interpret judgements made by a school-based tutor on a student's classroom performance. (This facility has been discussed with practitioners from other disciplines and met with considerable distrust: one respondent (a nurse) felt that it could undermine the relations of trust between clinical tutors and their university colleagues.) Again, it can be seen from this that the function of multimedia is about improving the quality of and direct access to specific evidence of skills and attributes rather than presenting a more holistic view of the student.

3.7.6. The programme for serving teachers at Northumbria University in collaboration with North Tyneside Local Authority [**26**] provides a contrast to the PGCE programmes. Here, the technology used is the North Tyneside Learning Platform, a customised commercial learning management system used across schools in North Tyneside, which the teachers also use in their everyday classroom practice. The teachers feel comfortable about sharing their practice on-line as a community of peer learners. They use a variety of media to provide evidence against the standards for the Professional Development Award. At the end of the programme the teachers' reflective practice is evidenced through a viva, captured on video. At this point, the online tool is 'closed', and their evidence is put together with their viva video on a CD-ROM. The assessment is against the university's criteria for a Level M award.

3.8 Assessing arts-based subjects

16	London College of Music at Thames Valley University	Music/Audio Technology	FdA, BA, MA	Display only	Joomla with plug-ins
25	Norwich University College of the Arts	Digital Arts	MA in Digital Arts	Formative and summative	Word-Press

3.8.1 Two of our case studies use e-portfolio technology to hold assessment-related evidence in arts-based subjects. These are the MA in Digital Arts at Norwich University College of the Arts [**25**] and programmes across all levels associated with Music/Audio Technology at the London College of Music at Thames Valley University [**16**]. In both cases, an individual lecturer has perceived the value and developed the use of e-portfolio technology within programmes under his control. It is perhaps significant that in both cases the programmes concerned explore technology in relation to the arts discipline, thus the expectations of the students themselves are likely to provide support for the staff member leading the innovation process. Both lecturers have chosen to use Open Source software, a blogging tool in one case and a CMS tool in the other. In both cases, the capacity to upload and store artefacts in different digital formats has been used to advantage.

3.8.2 Assessment practice on the programme at Norwich is a rare example where tutors are interested in the design/learning process and clearly feel comfortable with assessing the process as well as the product. They like the capacity of a blogging tool to provide a clearer chronological record of the development of design ideas than the previous practice which was to submit work for final assessment on a CD. It is also worth noting that the students themselves had an input into the selection of the right tool for their purposes, which may have been a factor in allowing this particular programme not to use the institutional tool but to choose a different product.

3.9 E-portfolios for employability

14	University of Westminster	Property and Construction	BSc programmes, modules at all levels, within the Department of Property and Construction,	Formative and summative	BB
17	University of Nottingham	Extra-curricular award	All undergraduates	Pass/Fail	PP

3.9.1 Much of the literature around e-portfolio development stresses their value as a tool which can be used by the learner to present themselves to a future employer or, at the least, can help the learner recognise and consider the evidence for those skills valued by employers. Two rather different case studies provide the best illustration of this use, one within a vocationally-oriented programme and the other as the vehicle for an extra-curricular award offered to any undergraduate in the institution.

3.9.2 At the Department of Property and Construction at Westminster [**14**], students are encouraged to think about the potential of their portfolios for job applications. There was

evidence of students putting effort into how their e-portfolios looked and what representation of themselves they carried, although the tutor explicitly stated that she did not use visual appeal as a marking criterion. In fact her marking criteria include a section for 'overall presentation and quality' which specifies 'layout and use of space' as a criterion. We are aware that the assessment scheme used by this tutor has been borrowed and used by tutors in other institutions, which might suggest a lack of confidence in the sector in devising appropriate criteria for e-portfolio assessment. Nothing in our study contradicts this idea that there is a widespread uncertainty about how to assess the presentational aspect of e-portfolios.

3.9.3 At the University of Nottingham a pilot scheme funded by the CETL for Integrative Learning has developed an award for students, the Nottingham Advantage Award, based on skills and experiences outside the academic curriculum [**17**]. Over two semesters students choose skills to develop in their extra-curricular roles. These may be roles within a student club or society, a volunteering placement or any sustained developmental activity they arrange for themselves. They record their skills and learning within their portfolio and prepare a final presentation for alumni/friends of the university. Preliminary feedback from students suggests that they value the opportunity to focus on a possible career pathway unrelated to their degree, develop necessary skills and think about next steps such as volunteering and temporary work.

3.10 Learning from 'stories'

3.10.1 As previously mentioned, some of our initial contacts did not yield case studies, either because practice had not yet been implemented or because it had ceased. In some of these instances we collected 'stories' which offered valuable insights about barriers to the development and/or sustainability of practice. Where sources were happy to be identified we have named them, but others preferred to remain anonymous.

3.10.2 Three 'stories' relate to programmes for new lecturers. These programmes frequently have longstanding experience of paper-based portfolio assessment. Commenting on experiences a few years previously, one respondent said:

> 'It was a challenge to assess online, if nothing else because of the need to move between different documents - the eportfolio (at that time submitted on a CD), the assessment criteria (paper or electronic), and the electronic feedback which was completed separately. We found that, if the participant had organised the portfolio in a structure that was easily navigable online (contained hyperlinks and provided an overview of the site/area etc.) and applied the basic principles of producing materials to be read off screen, then assessment was reasonably straightforward. Having said that, we only had a few of these eportfolios to assess at that time - the majority of portfolios were submitted in hardcopy form.
>
> "Not all of my colleagues were keen about e-portfolios, and printed the document off. This again was challenging, as each link pointed to a document that also had to be located and printed! One programme participant submitted a .pdf document which they deemed to be their online version. From the

assessor's perspective this was just like reading a thesis from the screen. Inevitably I printed it to make it easier to read.

"I think that support (for example in the form of templates) and also clear guidelines on how to put an e-portfolio together are crucial if introducing this type of assessment, for all concerned. A half-hearted version of an e-portfolio can be more difficult to manage than a paper-based portfolio."

3.10.3 This view was echoed by another colleague working in a similar context:

"We used e-portfolios on a postgraduate award in elearning…Initially we gave participants a fairly loose structure and encouraged them to explore the media in designing their portfolios. However, these turned out to be a nightmare to assess. I concluded that, while laying out information for yourself in a non-linear, hyperlinked fashion works well, it is less well suited to conveying that information to others. We tightened up the templates and the recommended structure. This tended to make portfolio structure a lot more linear. We also encouraged more emphasis on the core reflective writing piece and on the overview document.

"(At another university) we are introducing a similar award in e-learning with an e-portfolio. This time I will make the portfolio design session a core element. We are also moving towards an e-portfolio for our post graduate certificate for teaching in HE. However this has other areas that I can see as problematic e.g. much of the evidence provided is in hand-written form. Also, we will need to consider security, and how the portfolio assessment panels function."

3.10.4 A third colleague, teaching on the Postgraduate Certificate in Academic Practice at the University of Lancaster, was more enthusiastic but stressed that her positive attitude had developed quite slowly, accelerated by working with an overseas partner institution which made on-line submission of student work unavoidable. In the model she described, the portfolio acts as a collection of supporting evidence to the main submission, a Critical Review. She listed the advantages as:

- Giving annotated e-feedback (via 'inset comments') which has had a very positive response from course participants (although she commented that tutors had to school themselves to mark on-line);

- Requiring handwritten documents to be scanned in, which acts as an incentive for candidates 'to be highly selective about what they include, thus cutting down on excessive padding and extraneous material'. Furthermore every document in the portfolio <u>must</u> be cited in the Review, which also encourages 'restraint and selectivity';

- Easy extraction of text (with student permission) for evaluation and identifying impact;

- Participants experiencing as students pedagogic practices which they may wish to adopt in their own teaching practice;

- Much easier tracking and storing of submissions (which come in at different times);
- No large heavy portfolios to cart around!

This respondent emphasised however that the use of e-portfolios does not save marking time and may require longer because of the amount of feedback tutors find themselves wanting to write (particularly with participants on the low face-to-face contact programme). Nevertheless she concludes: 'I never though I would hear myself say it but…I am now an e-portfolio fan!'

3.10.5 Practice in another institution was foundering on the rock of institutional assessment policy. An educational developer reported that his institution required all summative assessment to be anonymised. Further, it required all electronic submissions of work to be available in hard copy. While personally keen to encourage assessment through e-portfolios, he could see no practicable or sensible way of doing this while at the same time conforming to institutional policy, and therefore no point in encouraging colleagues to consider this approach.

4. Stakeholder perspectives: (a) External examiners and assessors

4.1 The process

4.1.1 Many of the case studies identified make use of external *assessors* of student work. Assessors are most likely to be associated with courses with professional accreditation and in which students are required to demonstrate professional competences in relevant contexts outside the classroom. Common examples include social work, medicine and teacher education. Assessors are very often professionals already working in relevant contexts who take responsibility for evaluating and reporting on the performance of individual students as they undertake assessment tasks throughout the lifespan of the course.

4.1.2 Many of the case studies identified also require the participation of external *examiners*. External examiners can be associated with a wide variety of courses and do not usually have contact with individual students or student groups during the lifespan of the course. External examiners are most likely to receive samples of student work and other supporting information in order to assess the quality of course provision, including the validity of assessment regimes. External examiners will also participate in exam board meetings.

4.1.3 We selected a small number of case studies in two groups: those which make use of external assessors and those which use external examiners. Case studies were selected which represented relatively mature and well-embedded uses of e-portfolio software and a broad range of subject disciplines. Course leaders or other academic staff members who had already contributed to case studies were asked if they might be willing to put the team in touch with relevant external participants and (where required) broker access on behalf of the research team.

4.1.4 In all, six interviews were conducted, two with external assessors and four with external examiners. Discipline areas covered include medical education (2), teacher education, social work, educational technology, and learning technology.

4.1.5. Reflecting the variety of discipline areas and experiences of external assessors and examiners, both groups of participants were asked the following set of broad questions, with any supplementary questions generated spontaneously in response to the development of each discussion:

- *What do you do?*
- *What are your roles/responsibilities in relation to this course and/or the e-p section of the course?*
- *What sample of students?*
- *What sample of portfolios (whole or part portfolios)?*
- *How, in your experience, does e-portfolio assessment compare with other forms of assessment?*
- *What specific issues are raised by the use of e-portfolios from your external perspective?*

4.1.6. Responses were collected by telephone interview. Following the interviews, responses were typed up and returned to informants for checking and confirmation, with an invitation to edit and add further clarification and details. When the approved document was

received back from the informant, it was posted on to Googledocs for the entire team plus the JISC project manager and consultant to access.

4.2 Summary of responses: external assessors

4.2.1. The external assessors canvassed were able to access each student's entire portfolio at any time without providing notice to the student or asking permission, excepting those areas of the portfolio reserved for private, non-assessed reflection. The assessors had access to the portfolios of all students undertaking the course, not just those students in the assessor's own assessment grouping.

4.2.2. External assessors reported that adoption of e-portfolio software had had little recognisable impact on the nature of assessment tasks or on the relationship between student and assessor in practice contexts. Where changes to assessment *have* occurred, these have been the result of curriculum reform and the technology is perceived primarily as a tool to support agreed assessment practices rather than as a vehicle for change.

4.2.3. Tensions associated with some elements of assessment, including reflection or formative assessment have remained an issue for some assessors and continue to be debated. Adoption of e-portfolio software hasn't appeared to have had an impact on these debates and challenges.

4.2.4. E-portfolio software has, however, created new opportunities for assessors, tutors and course leaders to easily share timely information about the progress and attainment of individual students and groups of students and this has had a positive impact on the administration and management of courses in a number of ways:

- Early identification of 'at risk' students who may require additional support
- Early identification of students who may pose a threat in professional practice (in medical training)
- Comparative data on student or cohort attainment which can be used to benchmark individual assessments or activities in practice contexts and to inform quality assurance activities

4.2.5. External assessors reported some cultural and structural difficulties around the adoption of e-portfolio software. These included:

- Lack of access to computer equipment in certain assessment contexts (for example, in hospital wards). This meant that some assessment data must be collected on paper and subsequently re-entered into the portfolio by the assessor, creating additional workload.
- Difficulties associated with poor timing of software upgrades and lack of training for assessors using new versions of software which had a negative impact on confidence in the system.
- Some more general lack of confidence with computers and/or suspicion of technology

4.3 Summary of responses: external examiners

4.3.1. The experiences of external examiners were, unsurprisingly, more diverse than those of external assessors. Examiners reported significant variations in sampling of student work and in the access granted to student portfolios. Variations included:

- Password access to e-portfolio system and to portfolios of entire cohort (not anonymised)
- Access to university VLE or equivalent hosting copies of portfolio assessment items of entire cohort (not anonymised)
- Access to university VLE or equivalent hosting copies of portfolio assessment items of sample of cohort (anonymised)

In one case, the provision of access to student work via a university system distinct from the e-portfolio was intended to satisfy university regulations on anonymous marking. In two other cases student work was presented to external examiners in this way because of technical difficulties: remote password access to the chosen e-portfolio system was unavailable and so student work was copied and presented via the VLE as an alternative.

4.3.2. Examiners who were able to see a broad range of student work without prior tutor sampling reported that electronic access (either via a VLE or e-portfolio system) made it much easier to create their own sampling of student activity and to make a more "robust judgement" on the achievement of the cohort and the nature of the assessment process.

4.3.3. External examiners who were given access to the VLE associated with the course in order to sample student work reported that they were also able to gain access to other areas of the VLE (including, student and staff message-boards and other social networking tools) and were able to use this access to gain better insights into the management of the course and the amount of support available to students.

4.3.4. A number of examiners reported significant technical problems that constrained their effective engagement with the portfolio software and which had a negative impact on their experience of the external examination process. One external examiner reported some concern that poorly-managed adoption of e-portfolio software had initially had a negative impact on the student experience, although staff had worked hard to resolve problems and mitigate negative consequences and in subsequent years the implementation had been more successful.

4.3.5. The majority of external examiners reported that adoption of e-portfolio software had coincided with significant revision to curriculum content and/or assessment, either as part of changes to professional accreditation requirements or as part of institutional curriculum renewal. In one case, e-portfolio software was adopted to support a completely new course. Examiners reported the challenges faced by students and staff in adopting new software at the same time as coping with changes to existing assessment practices.

4.4 Key themes and questions

4.4.1. Overwhelmingly, both groups of externals reported that adoption of e-portfolio software had a positive impact on the management of student work and of student activities.

4.4.2 Where portfolio material is made accessible to tutors and external assessors, it offers a rich dataset to draw on to evaluate the progress (or lack of progress) of individual students or cohorts of students. Access to this data has created enhanced opportunities for external assessors to discuss student progress with course tutors: both parties are able to access the

same data in a timely way. It is easier, for example, to identify students that require additional support. When large numbers of students are undertaking the same assessment, this data can also be mined to assess the performance of different placement locations or to diagnose difficulties with particular assignments. Large numbers of collated e-portfolios together constitute an extraordinarily rich resource that can support robust quality assurance processes but also constitute a resource that has considerable surveillance potential. One risk is that the surveillance opportunities become more valuable than the learning support opportunities afforded by such software.

4.4.3. Online access to student work, whether in a portfolio form or delivered via an institutional VLE has also had a perceived positive impact on working practices. One external examiner commented*: "I cannot tell you how much easier it is than dealing with the packages [of student work] that used to come in the post"*. For external examiners who have access to the portfolios of the whole cohort, changes to working practices are more than merely practical: examiners are able to make new choices about the sampling of student work. Where previously sampling decisions may have been made primarily by course tutors, examiners are now able to decide what aspects of the course they wish to evaluate. This may have positive implications for the rigour of quality assurance activities but also changes the relationship between external examiners and tutors.

4.4.4. Where examiners are given access to student portfolio items via institutional VLEs, they have reported that their passwords also afforded access to other areas of online course activity (e.g. class message-boards, online tasks, staff discussions). This enhanced access provides the potential for more rigorous evaluation of, for example, support given to students during the course. One examiner described this as *"seeing the nuts and bolts of the course"*. However, there are implications for the relationship between external examiners, tutors and students and about the levels of privacy afforded to professionals working in an institution (for example, an external examiner would not have traditionally expected to sit in on tutorials). One external examiner noted the complete absence of any guidelines about this enhanced access and questioned whether ethics might not become an increasing issue.

4.4.5. Although every external examiner and assessor canvassed was asked to provide details of guidelines they had received from course teams for assessment of e-portfolios it became increasingly clear that new guidelines developed when e-portfolio software was adopted were overwhelmingly technical in nature (e.g. how to use the software). None of the external assessors or examiners reported that they had received any particular guidelines about the assessment of student work held in portfolios. As one examiner noted: *"all I get is what any other external examiner gets – nothing special"*.

4.4.6. Data from this short study suggests that, whilst the adoption of e-portfolio software has the potential to significantly change, and almost certainly improve, the management of courses, including management of quality assurance processes, there is less certainty about any associated changes to the roles of externals, particularly those of external examiners. Many of the issues reported by external examiners appear to result from unintended consequences related to technical challenges and the implications of these changes are yet to be fully understood.

5. Stakeholder perspectives: (b) institutional case studies

5.1 Process

5.1.1. Four institutions were visited: Northumbria, Westminster, Portsmouth and Bolton. The first three were identified as potentially valuable sites because practice was well established and all had yielded more than one case study using different tools. Bolton was a fourth choice even though the practice observed is at a very early stage, because of the breadth of the vision encompassed by the IDIBL curriculum framework and its implications for freedom of choice of both technology and curriculum content by the students.

5.2 e-Portfolios at the University of Westminster

5.2.1. The University of Westminster offers the facility to all its students and staff to create e-portfolios within their institutionally-supported Blackboard software. Around 4000 e-portfolios have been created using the Blackboard e-portfolios tools. However staff are moving to using the Campuspack suite of software tools (a Blackboard plug-in from a separate company), particularly the wiki tool Teams LX. The wiki tool is preferred to the blogging tool, Journal LX, because the wiki can be structured by staff: there was also a perception that blogs are 'really hard to mark'. The learning technologist supporting practice recognised that wikis are less good at capturing 'developmental stuff'. The wiki is also preferred to the website creation tool in the same suite, Expo LX, because tutors can set it up to be shared automatically with them. At the end of each year, students are told to export their own copy of their wiki: these are not preserved by the institution.

5.2.2. In practice, development of practice rests with a handful of enthusiasts: individual lecturers in different departments supported by an enthusiastic learning technologist. Our two case studies related to the Department of Property and Construction in the School of Architecture and the built Environment, and the School of Law.

5.2.3. In the Department of Property and Construction, the requirement to build e-portfolios is embedded in a wide range of modules, including core modules, in all years of the undergraduate programmes. The e-portfolio is worth between one third and one half of the credit for the modules (which are usually 15 credits). Students receive a clear set of instructions about what they must include in the e-portfolio, although the amount of detail for each item is left to them. Templates are available to save as Word documents in Blackboard to guide the construction of most items, although students are not required to use them (see below). Students also receive a very explicit mark scheme. Requirements include SWOT analyses, various c.v.s, action plans, reflections on their studies and achievements, professional skills analyses.

5.2.4. Students are not required to use the Blackboard tool, although most do, using the e-portfolio wizard in Blackboard. Some choose to use Dreamweaver, an increasing number use the Mac basic website design tool (which also has templates, but as .html pages) (see Figure 2). The students are very conscious of the difference in appearance which these tools produce. One commented that he found it difficult to believe that the lecturer was unaffected when marking the portfolios by this difference: 'one is a highly professional-looking site, one is Blackboard, the non-Blackboard one has the WOW factor'. However he recognised that web design was a specialist area:

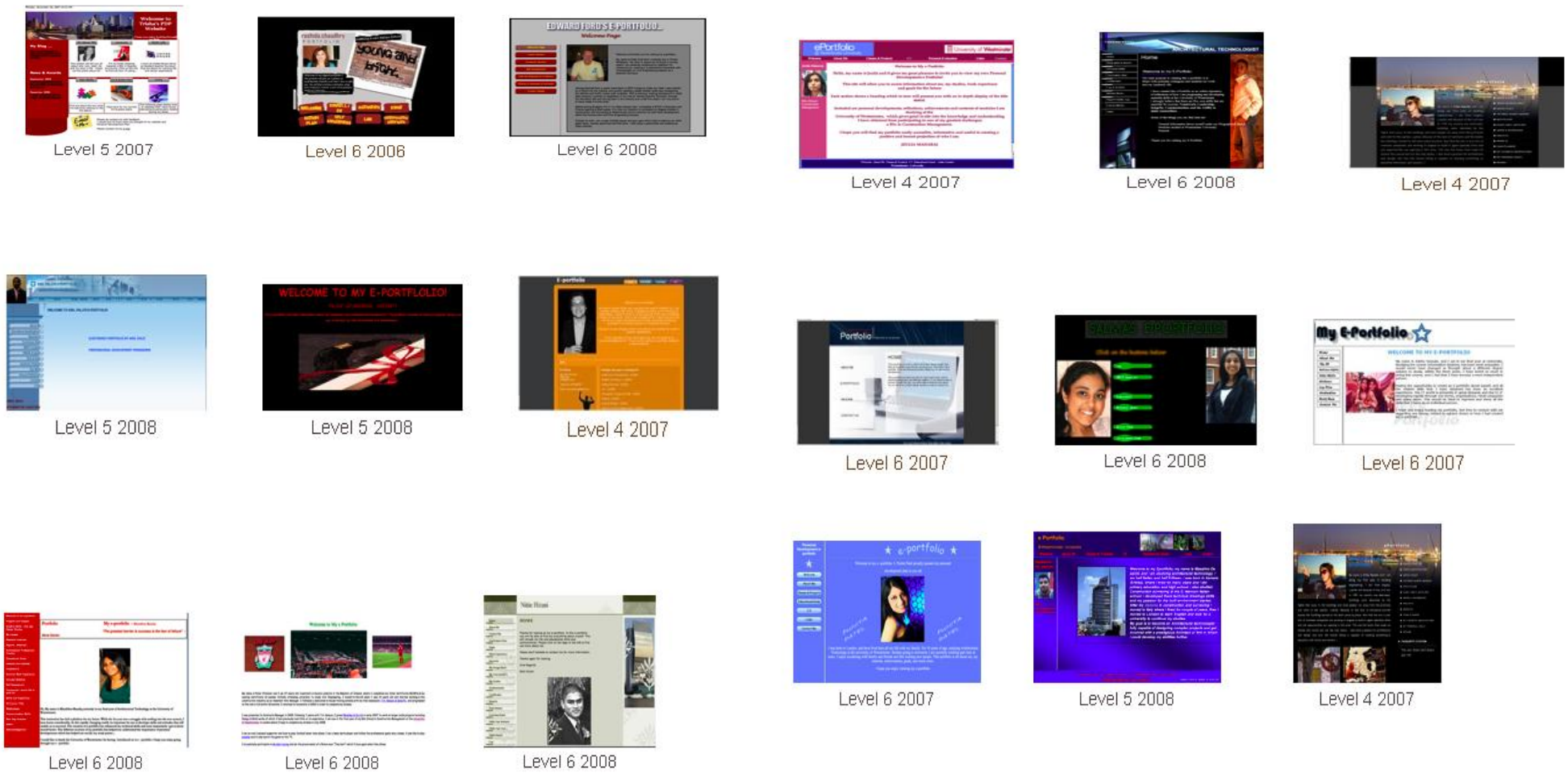

Figure 2: Examples of University of Westminster e-portfolio front pages using different web creation tools

‘in the world of work you wouldn’t create your own website’, at least for those working for larger employers. The same student also disliked the e-portfolio creation process in Blackboard: ‘got to keep creating links – clunky’.

5.2.5. The technology aside, the students appreciated the value of the e-portfolio process. One commented that she updated her Skills Matrix in the e-portfolio before going to a job interview and took a paper copy with her, to give herself confidence. (She got the job). These students apply for work placements as a required part of their degree. Generally they are highly conscious of the world of work and knowledgeable about the various pathways they could take after graduation. They are aware that the structure of the portfolio is linked explicitly to the requirements of their professional body, the Royal Institute of Chartered Surveyors.

5.2.6. An unusual and significant feature of the practice in this Department is the use of students as mentors for students in earlier years, to support personal development planning as a whole including e-portfolio-building. Students receive two days’ training in mentoring. This includes some IT training on Blackboard and Dreamweaver. They are each allocated around 10 students, and 5-7 of these are likely to use their services. Although it can take up to 20 hours of their time per semester, students value the opportunity to become mentors, both because they ‘learn so much from involvement with professional people’ and because it enhances their own c.v. – ‘ticks so many boxes’.

5.2.7. In the School of Law, a pilot has been carried out on behalf of the Academy Subject Centre UKCLE[26]. In the first year, students were offered the Blackboard e-portfolio tools; in the second year PebblePAD was offered using funding from the Subject Centre to buy enough licences. According to staff, student opinion very clearly supported the continued use of PebblePAD: ‘PebblePAD is more interactive and user friendly, allowing students to use their imaginations when constructing their portfolios. As a result they feel more engaged and in control over how they present their material, which in turn produces more interesting work’. Staff reaction was ‘overwhelmingly in favour of retaining e-portfolios as a method of reflective practice and assessment’. However, no further funding for PebblePAD is available and the issue of what software to use for the January 2009 presentation of the module had not been resolved at the time of writing.

5.3 Foundation Direct at the University of Portsmouth

5.3.1 Foundation Direct is a HEFCE Centre for Excellence in Teaching and Learning at the University of Portsmouth, and is the only one of the seventy-four CETLs whose remit focuses exclusively on providing tailored learning support for Foundation degree students. Foundation Direct has developed an online Professional Development Unit (PDU) intended to support PDP (Personal/Professional Development Planning) as a pedagogically informed and relevant process that prepares the individual for a professional future in the workplace. The Foundation degrees which offer the unit are part-time over three years, and the unit is taken in every year, providing 10 credits in Years 1 and 2 and 20 credits in the final year.

5.3.2. The PDU guides students through the skills they will need as a learner, such as essay writing and researching, and guidance on e-learning, which are then expanded and

[26] See http://www.ukcle.ac.uk/resources/ict/westminster.html

integrated with those skills required for success in the workplace: professional behaviour, giving presentations, writing reports, reflection and critical thinking. These skills are also essential for academic success, and the overlap between contexts is structured by reference to professionalism. Students are encouraged to think about what makes a professional, the ethical issues surrounding their profession and their practice, and where their career might take them in the future. Each student will end their degree, and the PDU, with a 360-degree review and evaluation of their learning and practice and a personal reflective statement, as well as a document most relevant to their life and their career plans, such as an application for a top-up degree or a new job.

5.3.2. The institutional VLE is WebCT/Blackboard. Some time has been spent evaluating e-portfolio tools. As the institution has recently upgraded its VLE and the new system includes the WebCT Vista portfolio tool it has been decided to support this tool institutionally rather than any other. There has been considerable internal discussion about the implementation of the e-portfolio tool, with some staff feeling that its prime function should be to support PDP, and that therefore it should be customised for that purpose. In this case, the customised version would have been presented to students on opening the tool. However, it has been decided not to pursue this route and the tool will be available for different teams and programmes to customise to suit their needs.

5.3.3. Currently the FD Professional Development Unit is delivered via the VLE with templates written to guide students' activities. There is an online discussion space but students reported some lack of confidence in using it – 'we know our course leader's going in and looking at it'. This lack of confidence extended to an unwillingness to show any of their written work to fellow students, although face-to-face discussion during their one day per week on campus was generally friendly and supportive. Nevertheless, despite initial uncertainty about the purpose of the unit and the value of continual reflection, students reported a sense of personal progression through engagement with the reflective exercises: 'PDU has become a life tool that can support me professionally'.

5.3.4. The programme team see the potential to enhance the PDU through use of the Vista portfolio. Currently the technology used to support the PDU lends itself to short individual assignments and reflections. The final 360-degree reflection is not explicitly required to draw on earlier records. This could change as the new tool becomes available across the institution.

5.4. The University of Northumbria

5.4.1. Northumbria also uses Blackboard as the institutional VLE and e-portfolio tool. One of our case studies related to an undergraduate programme using Blackboard, the other to teacher education using an external purpose-built system. Unfortunately we became aware of the use in teacher education too late to arrange meetings with users of the teacher education system.

5.4.2. We asked students in the second year of a Business Information Systems programme about their experience of developing a e-portfolio for assessment. They were happy about being assessed in this way and positive about the value of the exercises they had been required to complete. One commented that on a course which required 'lots of bits'

the tool helped with organisation which he would otherwise have found difficult. He found the tool ‘reasonably easy to use’ but showed some irritation at having to upload content first into the system’s webfolder when he would normally store things in his university filestore. He thought the system should be able to pick up content directly from wherever it was stored.

5.4.3. Students were unenthusiastic about the inflexibility of the system in terms of styles and layout: ‘you can’t get the personal touch, when you get marked on how it looks there’s not much leeway’. Like the Westminster students, they wanted to be able to produce something which looked ‘more professional, more personal’. However they were clear that they were not asking for another version of Facebook: ‘it doesn’t need to go as far as that’ but they wanted the facility for groups and for personal touches.

5.4.4. The system being used has an e-portfolio creation wizard which starts with a ‘homepage’. The students use the wizard to set up their portfolios but are not generally making use of the facility to link from the homepage to items in the portfolio. So far they have not explicitly been asked to do this, nor are they asked to make any internal links within the items uploaded for assessment. As their knowledge of web page design and programming would enable them to do so if they wished, it seems that it does not occur to them to do so. Discussion with the tutors suggested that they might well find it useful in future to encourage students to make these links: it would be interesting to see if this led to any decrease in the time spent by tutors in checking and assessing the portfolios.

5.5 The Inter-Disciplinary, Inquiry-Based Learning (IDIBL) framework at Bolton

5.5.1 The IDIBL framework recently approved at the University of Bolton is based on Winter’s Patchwork Text model, extended beyond text. The patchwork media idea is based on one "patch" per learning outcome. There are 3-4 generic or process learning outcomes per module and for each learning outcome, the learner has to negotiate and agree suitable learning activities, and a specification of what is to be assessed for that patch. Each patch should be, indeed is encouraged to be, a product or outcome of direct relevance to the workplace. Learners are expected to take significant actions in their workplaces. While the scope for such action varies from job to job, a job with no scope for taking action would not be suitable for someone on such a course.

5.5.2 A big challenge for students is to identify what the "inquiry" is going to be. A busy full-time employee cannot afford to take on an "inquiry" into something that is not part of their work. An "inquiry" could be directly into current work, or it could be into an aspect of work that was felt as a desirable direction towards which to develop. This may lead to initial insecurity about what the subject will be, but this is alleviated by the learner community and by the negotiation with the course staff, known as learning facilitators.

5.5.3. It is good that processes are open and transparent at this stage. Though learning agreements are routinely used in research degrees, the kind of agreement for IDIBL learners is of a different kind. In this very considerable flexibility, a common problem is the learner taking on too much. It is the primary responsibility of the learner, helped by the learning facilitators, to scope the activity appropriately. However, two community processes are very important as well: firstly the peer group, where those quick off the mark may define suitable activities which can serve as examples for others (though of course no two would be the same); and also the facilitator community, who can help if the facilitator is unsure of whether

the activities and outcomes specified are appropriately scoped. Participation in communications are often written into the module specification, and hence play a part in the assessment.

5.5.4. There are no timed examinations - assessment is based on a patchwork of accumulated elements of work culminating in a critical commentary that describes the learning journey in relation to the set module learning outcomes. A students' academic voice is developed through encouragement to creatively use alternate genres, rich media and technologies such as video, audio, websites and blogs. One patch output might be:
- a piece of software
- a video
- some poetry
- an extended essay
- a report

with the communicative and collaborative aspect covered by a requirement to reflect on group discussion around a topic.

5.5.5. Towards the end of the programme, learners are required to construct an exhibition of their findings primarily based upon the final year of their studies but drawing on the whole three-year experience. The exhibition is given to an informed audience identified by the learner, wherever possible in their place of work. Critical evaluation of the exhibition by the audience helps validate their findings.

5.5.6. There are few restrictions in principle on the technologies and forms employed by learners presenting material for assessment. One restriction is that what is presented for assessment must be able to be captured at a point in time, and kept securely, and must in that form be able to be examined by assessors and external examiners. This does rule out some more exotic formats. But in any case the format of the materials has to be agreed as part of the negotiated specification of the outcomes, so reasonable formats and technologies are usually chosen. As far as the technology goes, students describe feeling a wide-ranging freedom. For the more technologically employed, this might for example tie in with improving the available technology as a change in the workplace. Probably the "stitching" of the patchwork media is more challenging than making the individual patches. While linked texts could be used as stitching, using the web page model, equally a DVD menu model could be used where many of the patches were videos. There is no mandated overall approach, such as one might expect from assessment labelled as "e-portfolio"; any approach used with e-portfolio tools may be used.

5.5.7. The intended learning outcomes at different levels are set out in the Academic Proposal document. Outcomes are defined at levels 4 / 5, level 6 (bachelors degree) and level 7 (masters degree). It is expected that assessors will cope with the variability of what is presented as evidence by being very clear what it is that they are assessing. Generally this will not be the format itself, but the content, and therefore assessors must be on their guard against bias in favour of fancy presentation that is not part of the agreed outcomes.

5.5.8. An obvious question must be how the institutional IT service can support this type of programme. Fundamentally, the institutional IT service offers what it offers, and users negotiate what tools to use. But students may go beyond what is offered. From IT services, students and staff want efficient administration, bearing in mind that learners are not going to

be present every day at the campus. Equally, because students are not using institutional facilities, they hope that the institutional administration will be less officious, particularly about allowing people to start with pre-course communication and community building.

5.5.9. However, there is a need for an effective shared vehicle of communication, for several reasons. This communication system does not automatically form part of what is assessed. But it can, if agreed, like anything else, be assessed, if agreed as part of the learning outcomes for that learner. Learners may use various systems for communication, and may continue to use their own blogs if they have them, but discussion specifically around the course is expected to be held through the course blog system. A number of tools could provide the required functionality, but the current IDIBL Masters course uses two systems: the free Wordpress service from wordpress.com; and Moodle, which is hosted but "not supported" by the institution. Wordpress

- allows private conversations, which students report as important
- lets people share blogs
- has a good interface.

Another course, or another year, could choose other tools, which might or might not be institutionally supported.

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Appendix 1: Aims and Methods of the Study

This study had two broad aims: to provide a better understanding of the range of e-portfolio-based assessment practice in UK HE; and to identify examples of 'best practice' for further analysis.

The specific objectives of the study were as follows:

1. to identify and classify a range of examples of formative and summative assessment practices that involve e-portfolios in a range of HE and HE in FE settings;

2. to describe in detail a range of examples of formative and summative assessment practices that involve e-portfolios in a range of HE and HE in FE settings;

3. to identify how internal and external assessors carry out the assessment of work submitted as e-portfolios, including:

    - Strategies and techniques used
    - Supporting tools such as online or computer-based assessment
    - Criteria and tools or guidelines for assessing the work of digital artefacts in a range of media.

4. to identify future directions for formative and summative assessment practices, and the types of technology, tools and functionality that would support them, and provide examples of how institutional policies would need to change to support these initiatives.

5. to compare and contrast e-portfolio associated assessment practices, paying particular attention to the benefits and concerns expressed by each relevant stakeholder group, including learners, teachers/tutors, course coordinators, IT systems managers and senior managers, assessors and support staff;

6. to make recommendations to JISC on where it should focus its efforts in this area in realising the potential of e-portfolios to support assessment practices.

To meet Objective 1, a framework of key variables was developed, guided initially by the stipulations of the ITT, to include ; levels of study (Fd to Postgraduate research); disciplines/subjects; 'size' of assessment (amount of credit); timing of assessment; modes and locations of study; different types of tool. Through requests for information to existing networks of practitioners[27] a landscape scan of practice e-portfolio practice for assessment purposes in UKHE was compiled.

The first step in meeting Objective 2 was to develop agreed criteria for identifying examples of good practice. In doing this we drew on the experience of the project team, particularly in relation to previous work on the assessment of portfolios and principles for formative assessment. This resulted in a set of questions to structure our search for detailed case-studies:

- *Why has a portfolio been chosen as the assessment tool* ?
- *Why is an e-portfolio tool being used rather than a paper-based portfolio*?
- *What is being assessed?*

[27] Sources of information included SEDA, ALT, PDP-UK and the DEL2 projects, the JISC Programme Manager, JISC RSCs, JISC Advisory Services and the Academy Subject Centres.

- *In what ways does this exemplify good (or effective) practice?*

Data to address Objective 3 were collected as part of each case-study in relation to internal assessors: in addition a sample of external assessors/examiners was identified from the case-studies and separate telephone interviews were carried out (see Section 4).

Objective 4 prompted the addition of 4 questions to the set developed so far:

- *How was the chosen approach designed / implemented / introduced? What pedagogic / technical support was / is available to the staff and students involved?*
- *What will happen next year and the year after with respect to this use of e-portfolios? Why?*
- *What have been the benefits, intended and unintended? What have been the difficulties? If this use of e-portfolios for formative and/or summative assessment has been evaluated, what have been the main findings of the evaluation?*
- *What advice would you give to someone considering introducing the use of e-portfolios in formative and / or summative assessment?*

Objective 5 has been addressed by a combination of comparisons within the case-studies, particularly of practice within cognate discipline areas, and further data collected from visits to a sample of sites in order to talk to a wider range of stakeholders (see boxes within Section x and also Section z).

Objective 6 draws on data and interpretations from the entire study.

Following a JISC workshop on gathering case studies attended by two members of the project team, it was decided that an additional output from the project should be a website (built as a sub-section of the Centre for Recording Achievement website) which would house the case studies and allow for easier searching of content.

The protocol for the collection of the case studies is given overleaf.

Protocol for the case study interviews

1 In what contexts is this use of e- portfolios for formative and summative assessment happening? (Context here includes institution, school/department, subject, programme, module, year, and also any relevant teaching, learning and assessment policies/strategy.)

2. What is the particular use of the portfolio in formative and summative assessment within the overall assessment of the course - number of credits, duration of use of assessed eportfolio, etc?

3. What problem / opportunity / need was this use intended to address?

4. What is / are being assessed? What information is the e-portfolio for assessment expected or required to contain?

5. What are the assessment criteria? (Please attach any documentation students receive about what to put into the portfolio and what the assessment criteria are?

6. Who is / are assessing? Is there any self and/or peer assessment?

7. Why was the portfolio approach to assessment adopted? What other possible approaches were considered and rejected? Why were they rejected?

8. More specifically why was the e-portfolio approach to assessment adopted over a purely paper-based approach?

9. Which tool / approach / technology was adopted? What alternatives were considered? Why was the one chosen, chosen?

10. What would you like to do that the technology does not allow you to do?

11. How was the chosen approach designed / implemented / introduced?

12. What pedagogic / technical support was / is available to the staff and students involved?

13. Is there a facility for comments / feedback? Who can do this? How is access controlled?

14. Does the process include social networking?

15. Can the contents of the eportfolio be re-selected, re-presented and used for different purposes?

16. What have been the benefits, <u>intended and unintended</u>?

17. What have been the difficulties?

18. What will happen next year and the year after with respect to this use of e-portfolios? Why?

19. If this use of e-portfolios for formative and/or summative assessment has been evaluated, what have been the main findings of the evaluation?

20. What advice would you give to someone considering introducing the use of e-portfolios in formative and / or summative assessment?

Appendix 2: A landscape of e-portfolio practice for assessment

To identify the range of assessment practice using e-portfolios, a short survey was undertaken using SurveyMonkey[28] to collate results. Seventy responses were collated, from 41 separate institutions. Several institutions submitted multiple responses for different programmes, indicating that practice is clustered. Some institutions have taken a policy decision to develop e-portfolio –based practice, resulting in examples across a wide range of subjects: elsewhere, enthusiastic individuals are working in relative isolation. However, it was noticeable that few institutions in the survey belonged to those mission groups regarded as 'research-led'. The majority of practice is still firmly situated in institutions which regard themselves as 'teaching-led'.

Practice was spread over all levels of students and, in the case of professional teaching qualifications, staff as well. In many cases, it involved sizeable cohorts of students (indicating that in most cases institutions were beyond piloting with restricted groups). 45,000 users (NHS Scotland) was exceptional but numbers in the hundreds were not uncommon. It may be significant that the highest use was reported in year 1 of undergraduate programmes (39 cases, 56% of the total): assessment in Year 1 is increasingly a matter of progression and rarely counts towards final grades and in this sense may be seen as low-stakes assessment and a good area in which to experiment with novel methods of assessment.

A wide range of subjects were reported. However, on closer examination, much of this could be accounted for by the need to demonstrate the implementation of personal development planning in the programme. Many modules which made use of e-portfolios for assessment had titles suggesting generic skills development, the development of personal reflection on learning and action-planning/target-setting. It proved surprising difficult to identify examples of assessment using e-portfolios of what might be called pure subject content. Of course this is a difficult distinction to maintain, particularly in those programmes which are vocational and/or heavily work-based, and more especially those which have adopted the ethos of the reflective practitioner, such as health care and education. However as a generalisation it is safe to say that traditional academic subjects have very little representation in our sample of practice.

In terms of assessment 'value' (measured by credit rating) there was again wide variation, from e-portfolios being a requirement but not credit-rated to whole programmes assessed through e-portfolios. No particular pattern emerged, beyond a tendency for e-portfolio assessment once experienced to spread across modules and programmes. Practice was similarly varied in terms of when assessment occurred.

Nearly half (48%) of the respondents were using PebblePAD as their e-portfolio tool, twice as many as were using Blackboard or WebCT tools. This represents a clear shift from a previous survey of e-portfolio practice (Strivens 2007). There was also a slight increase in the use of Open Source tools such as WordPress.

Most respondents offered useful comments in response to the question "What is the most important thing you want to tell us - good or bad - about your experience of using e-portfolios in formative or summative assessment?" The complete list of responses is given overleaf.

[28] See http://www.surveymonkey.com

- In the area of professional development there is an initial reluctance to share thinking with other students...as a result, following the mantra about personal ownership, it is not pursued. However, at some point learners realise the potential power of sharing to enhance their learning and wish they'd tried it.
- Try it. It works!
- Admirably provided a PDP thread throughout School of Management UG programmes. However, underestimated time to access 400 portfolios and give feedback
- Don't make assumptions about the level of IT skills of participants. Provide support. E-ps should permeate the course over time
- Make sure students have a sufficient level of technical expertise. It's fun and students may surprise you!
- Don't be afraid to experiment and think creatively but include key stakeholders (eg students and IT services) early on to build trust and confidence
- Be clear about aims. Identify champions in partner organisations, be clear about business plan and sustainability.
- Get on and do it! If you are looking at formative assessment the benefits outweigh the costs. If looking at placement assessment there are a lot of (system) compatibility issues.
- Think through the pedagogic design of the module and the integration of formative and summative assessment within it before considering the use of an e-P - which aspects need enhancing and how will the e-p enhance them?
- Building up use of the technology gradually without setting up unrealistic expectations.
- Tool has to link with LOs and assessment criteria//methodology.
- Work with students in partnership, develop a culture that technology for learning is a shared challenge.
- Don't develop in isolation - learn from the experience of others.
- Time needs to be spent teaching the students how to use the technology.
- Yes yes yes but choose system wisely after considering what you want it to do.
- Don't underestimate the time needed to create and maintain online environments for learning and assessment.
- Have a small number of clear functional objectives, simple user interface, evolve it incrementally based on staff and student feedback
- Students can't automatically reflect. Give lots of examples. It takes time. Lots of reviews and feedback are important. Also, they are reluctant to share, seeing Law as a competitive business.
- Don't expect to just jump in and succeed. It took three years to get this system properly established
- No fear. Be brave, patient, think things through and take time to align learning and assessment. E-p assessment is 90% enthusiasm 9% planning and 1%perspiration.
- Good: allows me to look at lots of work without carrying heavy paper about. Bad: Students and their choice of packages- use of free resources from the web which are not marking compatible with the university
- I find it one of the most rewarding ways to assess students. Most times, if students are well supported and truly engage, they emerge from the process as a much more robust

individual. It gives them the tools to be resilient and forward looking as opposed to diffident about their work/learning experiences.

- Student enthusiasm. Their stories.
- Directing independent learning. Quality of peer feedback- language students adapt use as a result of learning. Improved written work. Link with employment
- Need for preparation, staff and students
- Technical difficulties with file permissions meant some content not accessible to assessor. Frustration with tool not allowing comments on individual pages.
- 1. Wonderful- the start of a culture change away from traditional delivery of information. 2. Collaborative learning 3. No sustainable follow-through supported by institution
- Use of a multiple choice law test. Making resources available to students
- Can be useful but sometimes technology can be an obstacle
- The online portfolio supported existing physical portfolios. Very creative process, gives students facility to showcase and reflect.
- Innovative, creative and engaging. Hard work, changes in work practices, still developmental, evolving and refining.
- Students appreciated opportunity to collect relevant evidence for job application and to showcase abilities and skills.
- Facilitates integration of PDP into the curriculum. Student engagement and achievement improved when paper-based portfolio substituted by e-portfolio.
- Have just run a small pilot of 25 students. Intend to roll out to all 1st years from Sept 08.
- Have a backup process, if any issues were to occur. Ensure that the introduction of the tool is thorough and clear to students. Ensure that the students know what is required of them.
- Fabulous for formative, building a learning community-type of work. Need to avoid a situation where everything gets thrown into one pot!
- It seems to work best when it is PDP-related, e.g. a reflective essay based on some portfolio element and using social constructivist curriculum objects (e.g. a blog)
- Make sure you have the administrative and technical support for using the e-portfolio for summative assessment.
- It was an amazing year. Working alongside new teachers and seeing their practice develop.
- Ability for student, practice assessor and personal tutor to share material and contribute to assessment.
- Has really enabled and progressed assessment for learning and fostered active student engagement.
- Links tool for both school based work with University/TDA requirements
- Range of engagement/achievement, both in terms of reflective practice and engagement with ICT. Challenge to help ALL students to understand value of this both in module and as part of lifelong learning.
- Very important to fully involve staff as users not just expect them to use the software
- Use of the portfolio for managing the whole assessment process- submission, first/2nd

marking/external examiner access, feedback to students, record of results.

- New system alongside of the new systems for these trainees. Only subject in the course that used eportfolio... Time... Access... support/guidance and made trainees a lot more focused and think about what was 'good' evidence and feel they had progressed.
- Ensure students have necessary ICT skills, with lots of hands on sessions so students and staff become familiar with software.
- We successfully combined face to face, VLE and eportfolio. Students find it useful prep for exam.
- Timely feedback and the chance for modifications.
- Personal- not fully conversant or confident with gateways for feedback and archiving- currently emailling feedback to students.
- The Northern Ireland Teacher e-portfolio is an attempt to provide an e-portfolio which spans all of Teacher Assessment and Accreditation.
- Needs to be simple for students and tutors to use and of value to the assessment process. Can take a lot of time to assess an e-portfolio. May need to provide a reflective piece which is supported by evidence in the e-portfolio itself.
- Excellent as a means of reinvolving adults with education. Needs support as very few of the adults a)read the instructions, b) understand that university regulations are not optional and c) really grasp the basic reasons for referencing or the difference between knowing 'stuff' and analysing/synthesising for academic purposes. That said, the institutional commitment to this as a way forward is strong so support systems and processes are evolving.
- The relentless pressure of marking, albeit small tasks, via e-systems is far greater than by one to one. The entire portfolio was initially an e-portfolio, however, this gave us real problems with moderation: we now ask for hard copy of the completed portfolio and treat the e-tasks as formative. We then mark the hard copy against the criteria for presentation, demonstrated progress etc. This has proved more effective and easier to manage safely. The students claim the work books are well designed and helpful... but they find time managing their study time difficult. They ask for more workshops as they enjoy the face to face opportunities. We need to improve the social scaffolding we build into the course so that they feel less lonely.
- I do not believe that most students would create an ePortfolio documenting their personal development processes through the course if it were not assessed; but most students come to see the value of the portfolio tools through using them to complete the assessed portfolio
- Whilst all students submitted the portfolio for summative assessment (most by the deadline), only 3 (approximately 10% of the group) took the opportunity to submit for formative assessment. Those who did achieved higher grades as a result, as they improved submissions in response to the feedback.
- Bad was the amount of time it took to prepare and mark. Good was that the students had to engage in it whether they liked it or not as it was credit bearing.

Appendix 3: Principles for e-portfolio assessment practice.

A discussion paper

E-Portfolios should help students:

21. Track, manage and record their learning and development over time

2. Reflect on and self-assess learning

3. Derive feedback from multiple sources to assist learning (peers, tutors, employers etc)

4. Present their learning achievements in different ways to different audiences for different purposes (e.g. claims making)

Some other possible candidates:

5. Bring together theory and practice in the discipline

6. Make efficient use of their study time (in and out of class)

7. Develop supportive learning groups and learning communities

8. Enhance their efficacy beliefs and self-esteem (not sure about this as part of the others if done well)

9. Develop qualities, skills, identities and attributes that go beyond that explicitly valued by summative assessments

Some other agendas come to mind (e.g. personalisation – e-portfolios should help students to personalise what they learn, record or present).

From a staff perspective… other possibilities emerge although some are mirror images so it might be better to focus on the student perspective (learner-centric). But as an example:

E-portfolios should help staff:

- Track student learning and provide feedback when required
- Select work that meets summative assessment requirements]