
INTRODUCING E-PORTFOLIOS ACROSS A PAPER-DOMINATED UNIVERSITY: STUDENT AND STAFF VIEWS TOGETHER WITH ATTITUDES TO THE VALUE OF CHANGE

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Abstract: E-portfolios are inherently suited to effective assessment for learning. An e-portfolio can be shared at any point with peers or tutors alike, formative feedback can be given at various points in the e-portfolio building process and following this the portfolio can be finally submitted for summative assessment. In this paper the use of e-portfolios across a range of subject areas is described and evaluated. This development in the use of an electronic means to present and assess student progress involved over 2000 undergraduate students and 25 staff. Their views on the effectiveness and value of e-portfolios were subsequently sought through a questionnaire and face to face interviews. Around half of the students stated that they found it easier to put their thoughts and feelings forward through an electronic interface, finding the process of creating an e-portfolio interesting and challenging. Many students believed that making an e-portfolio helped them to think more about what they had learned and achieved whilst a lower proportion thought that making an e-portfolio helped them to organise their thoughts or work. All of the staff involved found the use of e-portfolios of value and adapted well to the demands of marking electronic forms of students' work.

Keywords: assessment, feedback, ePortfolio, elearning, online marking

Background

Both the Tomlinson (2004) and Schwartz (2004) group reports stress the importance of information technology to learning in the 21st century and the need for learners to be able to tailor the evidence they use for assessment. An e-portfolio allows learners to collect, select, reflect and celebrate their learning and progression and have the freedom to use multiple forms of evidence both formal and informal.

An e-portfolio is typically made up of a digitised collection of resources and artifacts and can include text based materials, graphics and multimedia. In addition however an e-portfolio allows for an exchange of ideas between the owner and those who view and comment on it. This, coupled to the personal reflection of the owner, can create powerful opportunities for learning (Greenberg 2004). Compared to paper portfolios, e-portfolios offer a range of benefits including the capability to collect and present a wider range of resources, easier management of resources and enhanced flexibility with respect to access and feedback (Oduyemi and Ogston, 2006).

Partly as a consequence of the reports referred to above, e-portfolios are increasingly becoming part of the educational landscape; they have significant support from educationalists who consider them an important and more developmental form of assessment. Portfolios are essentially constructivist tools and so neatly fit with the importance that is attached to the work of Vyogotsky (1978) in modern educational theory.



1. How ePortfolios have been used at Westminster

Blackboard has been used at the University of Westminster for over 5 years. However the content system component, which provides the e-portfolio functionality, was only introduced in the academic year 2006/7. In this academic year a total of 13 study skills based modules made use of the e-portfolio tool. They spanned all undergraduate levels and a number of subject areas. (Table 1) 25 academic staff and over 2000 students were involved, with all experiencing the use of e-portfolios for the first time. It should be noted that all portfolios were assessed and contributed to overall module marks.

Table 1 – The range of modules involved

Module name	Year	Percentage of Module Mark	Submission Method	N. Students	N. Tutors
Work Placement in a Legal Setting	2	100%	Assignment function	64	2
Studying In Higher Education	1	50%	Assignment function	345	9
Perspectives of Computer Science	1	40%	Sharing	256	8
Developing Your Professional Future	2	100%	CD	196	5
Employability and Work Placement	2	100%	CD + Paper	17	2
Cross-Cultural Work Placement	3	100%	CD + Paper	17	2
The ICT Practitioner	1	40%	Assignment function	122	2
Introduction to the Built Environment	1	50%	CD	123	5
Research Methods	2	30%	CD	22	2
Research Methods	2	30%	CD	40	2
Personal Development	3	100%	CD	72	2
Interpersonal Skills for Business	1	15%	Sharing	413	11
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Although each module listed in table 1 had unique learning outcomes, all of the e-portfolios had a number of common elements which supported Personal Development Planning (PDP) (Table 2). The majority of modules involved students undertaking a cycle starting with a period of self assessment; this was followed by action points, presentation of evidence and then finally reflection. The cyclical nature of PDP was well supported by the eportfolio tool as it offered content control back to the student.

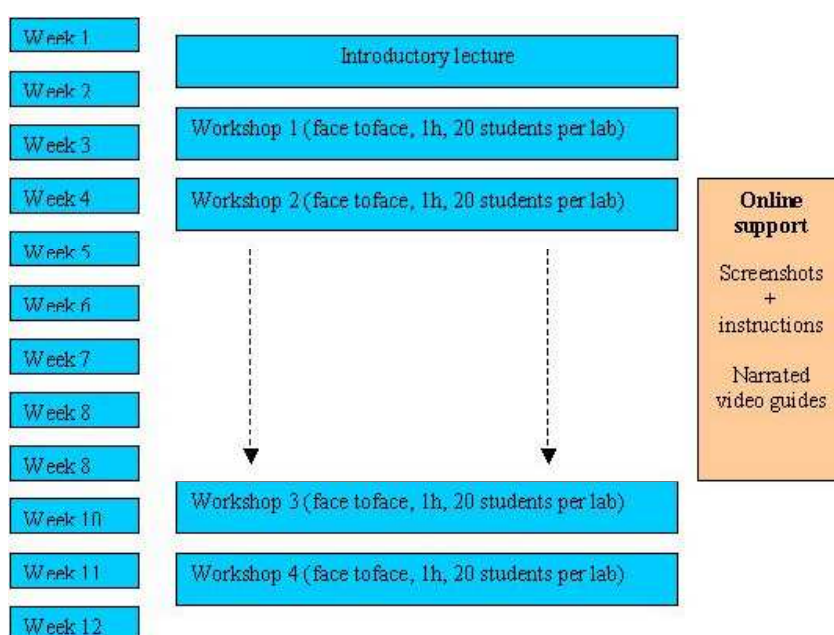
Weekly tasks helped students in the PDP cycle and focused mainly on career and study skills. Students reflected on their learning styles, educational and career goals and learned to promote their achievements and evidence their skills development.

Table 2 – Common PDP based content

Welcome:	Should contain a brief welcoming statement to people viewing your ePortfolio. Write a short paragraph detailing what you hope your visitor will learn from your E-Portfolio and add an introduction to your and your educational career.
About Me:	Should contain a personal statement that explanations to your audience who you are, where you come from, and where you're headed in your life.
Self assess	Undertake the learning styles assessment and complete your skills matrix, including SWOT and SWAIN analysis
CMS	Career Management Skills is a resource developed by the university careers service to help students develop self-awareness in the context of career decision making
Educational Goals:	A reflection on your educational goals. This is your first opportunity to reflect on your educational goals following your career plans.
Action plan	Based on the previous self assessment and subsequent reflection, decide on your action points and schedule.
Evidence	Should contain selected coursework and reflections, display samples of your academic work to demonstrate your abilities and creativity.
C.V:	Produce an electronic version of your resume which can be interactive with hyperlinks.
Contact:	Should contain email information so that people can get in touch with you

The use of ePortfolios was new to the vast majority of students and staff, as a result extensive support was provided by a learning technologist. They assisted in the design and delivery of the modules using e-portfolio, with the support being a blend of face-to-face workshops and online support (summarised in figure 1).

Figure 1 - Summary of the typical Module support provided by Learning Technologists



2. Analysis of feedback on the use of e-portfolios from students and staff

General student feedback on the process of making an e-portfolio

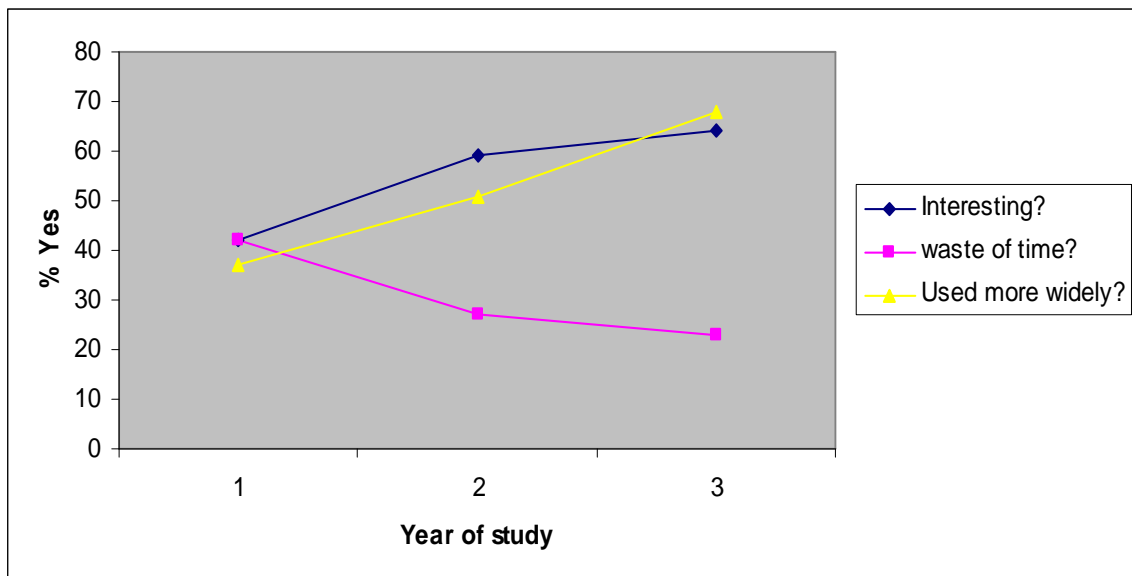
Over 250 students completed a questionnaire designed to find out more about them as individuals, how they had worked to make their e-portfolios and to assess how valuable they had found making an e-portfolio. The majority of students (75%) indicated that they considered themselves to be sufficiently computer literate to use the e-portfolio tool with a minimum of training. Most of the students were generally positive about making their e-portfolio, collectively identifying the following points which in their view made their e-portfolio and the process leading to its generation of value to them:

- Opportunity to think more/reflect
- Recognise/understand their achievements
- Plan for future career or understand job opportunities/career path better
- Determining strengths and weaknesses

There were variations however across the undergraduate level. For example first year undergraduates were less likely than final year students to cite links to employment as a reason for valuing the e-portfolio (30% 1st years versus 60% 3rd years). Naturally the likely reason for this is the increasing importance that final year students would attach to course content that could help to find employment on graduation.

The Graph below (Figure 2) clearly shows the increasing value that students attached to the PDP process and use of ePortfolios as they progressed through the university. There are a number of contributing factors; perhaps most notably is the pressing need for employment but also significant is the very exam orientated nature of our students as they enter the University.

Figure 2 - Relationship between year of study and views on the value of making an e-portfolio



Use of multimedia in e-portfolios

One potential advantage of e-portfolios over paper based coursework is the capability to include audio-visual artefacts/evidence. A high proportion (66%) of students used images in their portfolios, although only 5% of students included audio or video files, which was initially surprising and significant. Amongst the reasons cited for not using audio/video were:

- Lack of confidence in the value of using multimedia for assessment,
- Lack of IT skills,
- Prior learning experiences.

Table 3 – Shows students preferred medium of reflection

How do you prefer expressing/ recording ideas or thoughts	% preferred
Text	72
Drawings/graphs/tables	20
Audio	1
Video	7

Most clearly prefer text with only a small minority indicating that they would find it easier to express themselves through visual or audio media. Clearly it is not safe to assume students will automatically use multimedia when given the choice. It is likely that student use of multimedia will change slowly and will clearly be dependant on the tasks given and whether learning outcomes are best delivered through such media. If the use of multimedia is to increase then tutors will have to make it clear why multimedia solutions provide value added within the assessment regime being used.

Table 4 - The student's comments/reasons as to why they used audio/video/images

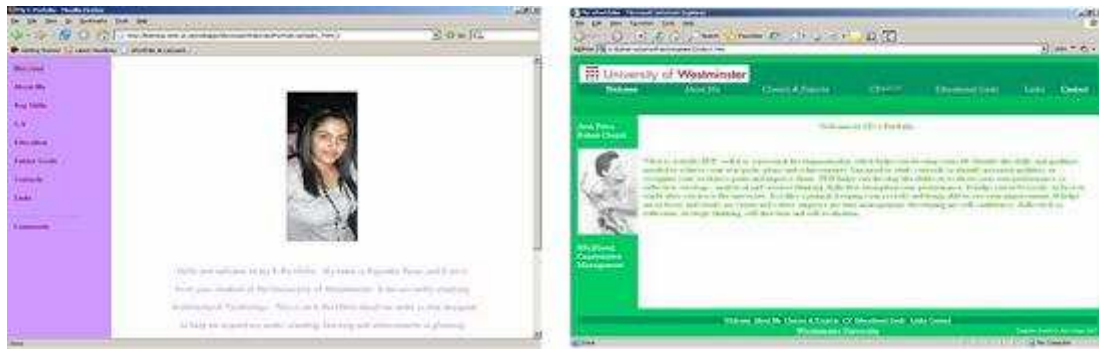
Audio	Images	Videos
<ul style="list-style-type: none"> ▪ To help explain and set the scene about the aspect I was talking about ▪ Audio was used to make the page a bit more lively with some music ▪ I added sound to give my portfolio an atmosphere, so that when you read it, you feel relaxed ▪ I explained how PDP was useful ▪ Audio was a music track I liked 	<ul style="list-style-type: none"> ▪ To make it look better, more colourful and interesting ▪ To decorate the welcome page ▪ To be more creative ▪ So I could demonstrate that skill ▪ There's a think in retail called "impact items", that's what the photos are for ▪ To show a relative image to the text I typed ▪ I felt the images made the portfolio more welcoming to the user ▪ To show who I am, I think it's important for people 	<ul style="list-style-type: none"> ▪ As a welcome note ▪ To make the portfolio more creative looking ▪ To show related topic about my dissertation ▪ I think it's more catchy than plain text ▪ I thought I get extra marks ▪ So the reader can get a better understanding of me ▪ Another way of showing info

It was also interesting but perhaps not too surprising to note that there was a significant difference in the preferred reflective medium for students from different courses. There was a marked increase in the value attached to multimedia when computing students were asked as compared to those from the social science faculty. Such variation may be affected by learning styles and familiarity with technology, but is also likely to be related to the nature of the tasks in each module.

When asked whether ePortfolios should be used more widely, 70% of computing students answered positively as opposed to 26% of those from social science. Clearly the use of e-portfolios needs to be carefully matched to the skills and students being assessed and the methods being used for assessment.

Examples of students' e-portfolios





3. Analysis of feedback from staff

All of the staff surveyed (15) and interviewed (5) agreed that e-portfolios had been useful to the teaching of their course, collectively highlighting the following as reasons for the success of e-portfolio use:

- Made it easier to identify struggling students requiring additional support,
- Easier for students to submit their work,
- Easier for the tutor to view work quickly,
- Developed student IT skills,
- Helped in the monitoring of student progress,
- It provided templates to enable scaffolding of student progress,
- No large paper e-portfolios to carry,
- Facilitated provision of both formative and summative feedback,
- Allowed students to be more creative,
- Saved time when collecting work,
- Accessible from anywhere,
- Students found e-portfolio interesting and motivating.

One significant feature of the use of e-portfolios for staff was the possibility of marking the work electronically (91% of all e-portfolios were marked on screen as opposed to working with a printed version). Three different submission routes were used across the 13 modules (Table 1) including; CD (30% of the modules), via the assignments function of Blackboard (60%) and through the e-portfolio sharing mechanism also in Blackboard (10%). The majority of staff returned feedback to students on their final e-portfolio through some electronic means (either by email or via the assignments function).

4. Challenges arising

Although staff identified the sharing function as potentially useful for formative feedback during the construction of a student's e-portfolio, in practice very few students shared the portfolio with their tutors early enough for this to be overtly beneficial, this was a shame and will require further development. There may also be a need to introduce some mid point assessment to further scaffold the process as some students did not build their portfolios gradually.

Although all staff managed to mark on-screen, there were certain difficulties raised. Apart from the obvious problem of getting used to working on-screen (as opposed to on-paper) several staff experienced difficulty opening the portfolios (which were zipped files) from CD and those using sharing as a mechanism for submission were wary of the fact that shared portfolios could not be 'frozen' at the date of submission. (i.e. a student could still make changes post submission date) Several staff also stated that they would have liked to mark on-screen by leaving text annotations at

appropriate points next to the content in the portfolio rather than compiling cumulative feedback at the end of the portfolio.

Overall, staff felt that the use of e-portfolios had been advantageous to them. However a majority clearly felt that they had spent insufficient time re-designing the activities undertaken by students, to take into account the technological changes.

5. Conclusions

An e-portfolio is typically made up of a digitised collection of resources and artifacts and can include text based materials, graphics and multimedia. In addition however an e-portfolio allows for an exchange of ideas between the owner and those who view and comment on it. This, coupled to the personal reflection of the owner, can create powerful opportunities for learning (Greenberg 2004). Compared to paper portfolios, e-portfolios offer a range of benefits including the capability to collect and present a wider range of resources, easier management of resources and enhanced flexibility with respect to access and feedback (Oduyemi and Ogston, 2006)

It is possible for staff and students, who are used to working with paper portfolios and assignments, to rapidly change to making use of e-portfolios and generally accrue advantages from doing so. However to be successful it is clear that a proportion of students, as well as the staff, require extensive support at key points in the process and that students will not exploit the full potential and flexibility of e-portfolios unless encouraged to do so. It is also significant that undergraduates in the final year are more likely to immediately see the benefit of making an e-portfolio given the direct and indirect links to future employment. Naturally there are differences between subject disciplines in for example the use of multimedia and the degree to which students would like to see e-portfolios used more widely through the curriculum. By and large staff adapt well to the demands of marking on-screen and collectively identify a broad range of advantages that e-portfolios offer over paper based alternatives.

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