Appendix three: publication three

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Aim of the chapter

An exploration of how, and in what ways, an ePortfolio combined with reflection can support personalised learning in higher education.

Approval from publisher for inclusion in PhD

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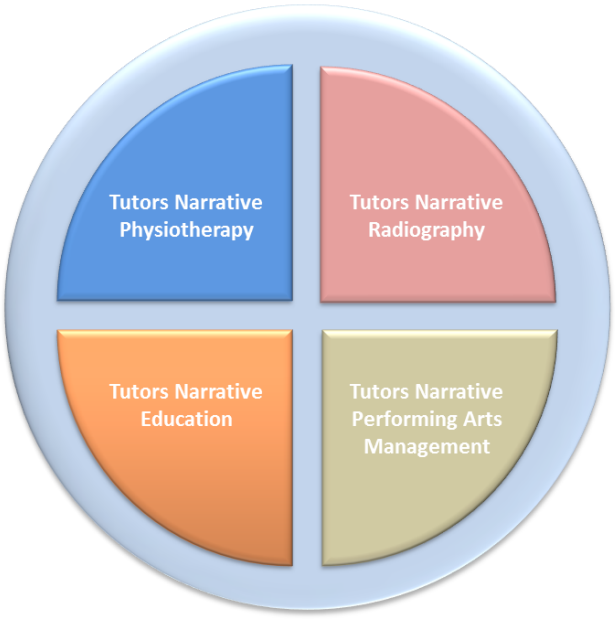
In the region of 250 – 300 books**.** Information provided by Ms Jan Travers, Director of Intellectual Property and Contracts IGI Global **(**26/06/2013).

Pictorial representation of research methods in P3



Authors' contributions to the paper	
70% by Susi Peacock	I undertook the literature review on personalisation and reflection. Also, I collected the tutor narratives in face-to-face meetings, and text-based communications. I structured the article and, after collating tutor stories, circulated to all writers for feedback and review. I then edited, and re-edited, merging the tutor narratives, and literature reviews into one piece. In addition, I liaised with the editor and worked with the peer reviewers.
5% by Dr Morss	Dr Morss provided specific support on the section about reflection.
5% by Dr Murray	Dr Murray assisted in the editing, development of the reference list and creation of diagrams.
5% by Dr Irvine	Dr Irvine provided information about the case studies, suggested diagrams and images and provided comments/feedback on the final drafts.
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5% by Mr Girdler	Mr Girdler provided information about the case studies, suggested diagrams and images and provided comments/feedback on the final drafts.

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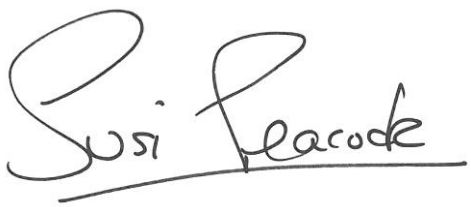
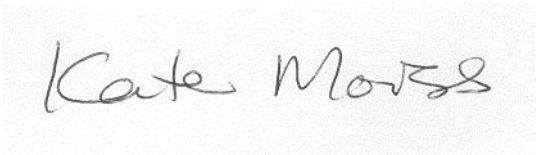
Susi Peacock		03/04/2015
Dr K Morss		02/04/2015

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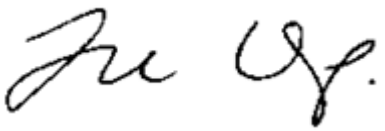
Dr J Hislop		02/04/2015
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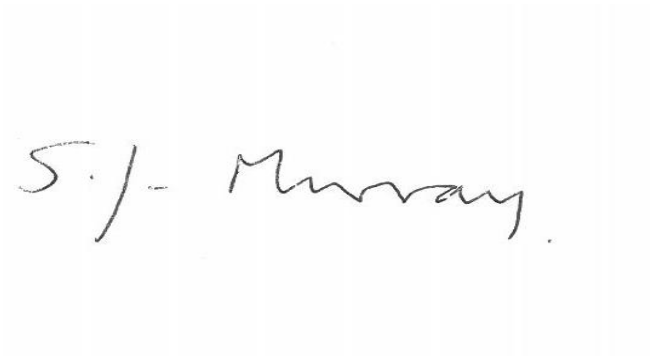
Dr S Murray		05/05/2015
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Chapter 11

Using ePortfolios in Higher Education to Encourage Learner Reflection and Support Personalised Learning

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ABSTRACT

Personalisation, with its emphasis on learner choice and lifelong learning, challenges educators to provide an innovative, student-centric educational experience. New technologies have great potential to support personalisation; however, institutions must review their approaches to assessment and feedback and their strategies to learning and teaching as well as increasing opportunities for collaborative learning and extending their external partnerships. This is a significant agenda for any institution. In this chapter, through our four case studies drawn from different subject areas in a higher edu-

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cational institution, we illustrate how ePortfolios when integrated into the curriculum and combined with reflection can support personalised learning. We also discuss the challenges of such an approach including lack of learner engagement with the reflective process, an increase in tutor time, restricted learner access to technology and the need for dynamic ePersonalisation. We offer suggestions for educators in addressing such issues in order to provide a truly personalised learning experience.

INTRODUCTION

The aim of this chapter is to contribute to current debate and inform practice on how, and in what ways, an ePortfolio can be used to encourage learner reflection and support a personalised learning experience in the higher education setting. In this chapter we:

- briefly outline personalisation and the theoretical and practical challenges that it presents for educators;
- discuss how reflective learning supported by an ePortfolio can help educators rise to these challenges and support learners to become independent, autonomous lifelong learners;
- provide exemplars, drawn from a range of subject areas, to demonstrate 'ePortfolios in action';
- offer suggestions on how ePortfolios, when integrated within the curriculum, can encourage reflective learning and help educators to support a truly personalised learning experience.

PERSONALISATION OF LEARNING: AN OVERVIEW

Personalisation of learning has emerged as a key concept in the vision for the United Kingdom (UK) Government's reform of the public service sector including education. Although the discourse on 'personalization' originated in the United States, recent UK policy documents and political debates imply that for school education, personalisation seeks to improve learner engagement, achievement and progression with the learner at the centre of a supported educational experience where there are opportunities for dialogue between learners and advisors (AoC, 2006; Pollard & James, 2004). Central to the personalisation agenda are:

- choice for pupils to decide what they learn and how they will learn it with the aim of removing barriers to learning and engaging all learners, especially vulnerable, disadvantaged and disengaged young people (DfES, 2006);
- developing learner autonomy and skills for lifelong learning which includes:
  - setting and having high expectations of learners;
  - developing the learning experience to reflect how learners learn, especially through interaction and collaboration;
  - focussing on the learning of skills as well as the transmission of knowledge;
  - fostering independent learning and decision-making so that learners can identify, plan and take responsibility for their own learning according to their specific needs.(DfES, 2006; Leadbeater, 2004; Miliband, 2004).

The Department for Education and Schools (DfES, 2004) has set out five key components of personalisation which schools need to address (see Figure 1).

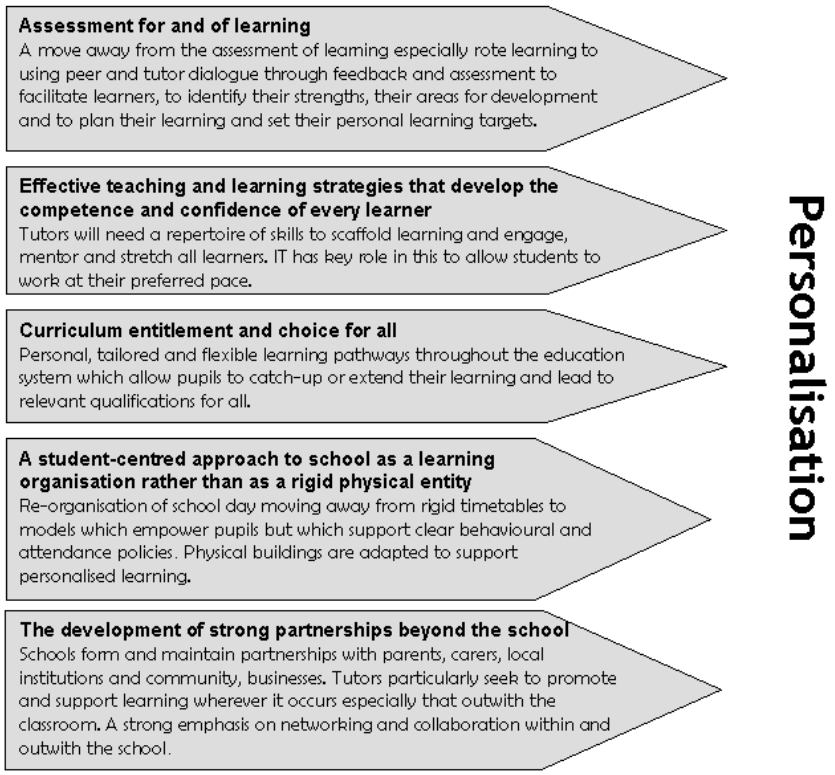


Figure 1. Five components of personalisation. (Sources: DfES, 2004; Field, 2006; Pollard & James, 2004).

Despite general acceptance of the ideals of personalisation, concerns persist, including:

- raising expectations that cannot be met without significant increase in resources (Pollard & James, 2004);
- ensuring equity of experiences for all, including those who are less confident and less able to articulate their needs and wishes (Leadbeater, 2004).

THE ROLE OF TECHNOLOGY IN SUPPORTING PERSONALISED LEARNING: EPERSONALISATION

There seems little doubt that new technologies have great potential to support the implementation of personalised learning, 'ePersonalisation' (AoC, 2007; DfES, 2005; Knox & Wyper, 2008) and to meet the associated challenges:

"*… when we consider the systematic challenges posed by personalisation, it is clear without digital technologies, we are unlikely to be able to meet the needs of learners*" *(Green, Facer, Rudd, Dillon, & Humphreys, 2005).*

Across all socio-economic classes, digital technologies are already used extensively by young learners for socialising, communication and learning (Prensky, 2001). Students extensively use social networking sites to discuss their learning, find resources and prepare assessments. In 2007 Facebook had 21 million registered users generating 1.6 billion page views each day (Ellison, Steinfield, & Lampe, 2007). Some schools are exploiting the popularity of social networking to facilitate collaborative learning and to encourage participation of all learners, especially the disadvantaged and disengaged (Green et al., 2005).

Technology has also pervaded the school environment through the use of Virtual Learning Environments (VLEs), interactive whiteboards, Personal Digital Assistants, laptops, wikis, and personal voting systems facilitated by high-speed educational networks. The implementation of such technology has transformed the traditional learning environment and enabled learners to develop new skills and access a wide array of resources (NCSL, 2006). Also, the technology has allowed teachers to explore new approaches to learning, teaching and assessment leading to improvements in access and equality as well as increasing student engagement and motivation; this has helped schools to meet the personalisation agenda (Green et al., 2005).

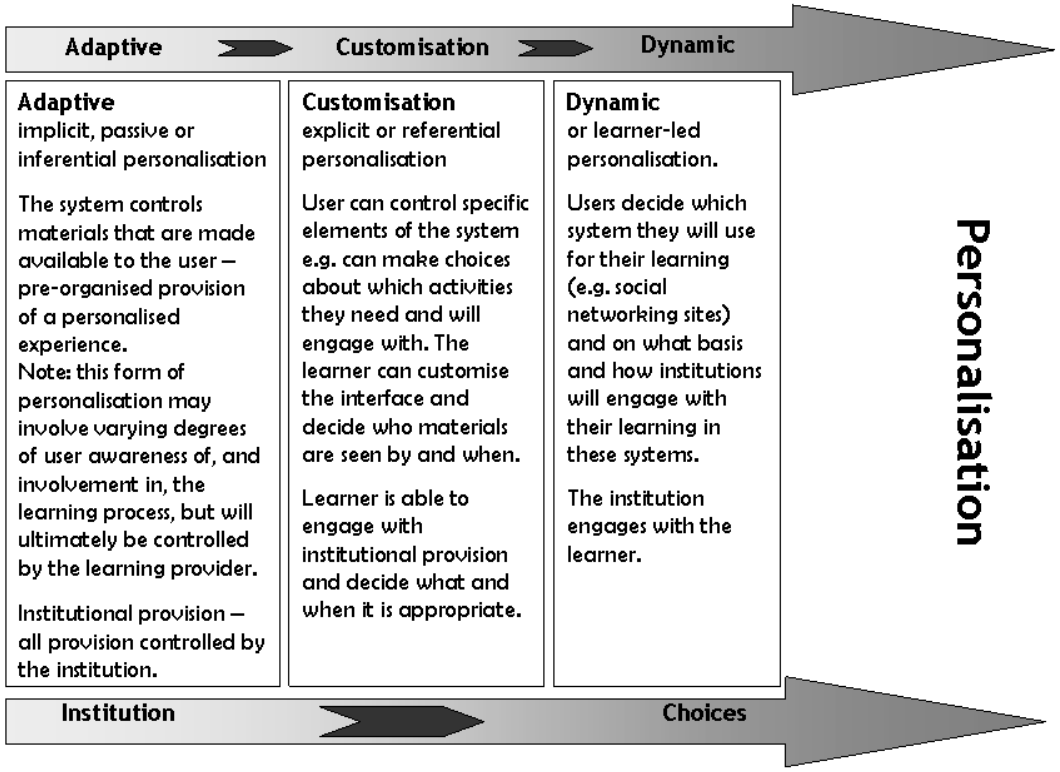
However, digital technologies may exacerbate some of the challenges of personalisation especially if there is limited access to computers and the Internet. Also, it cannot be assumed that all learners are comfortable with learning in a digital environment. In addition, concerns are now emerging that technologies only support a passive type of personalisation whereby learners have to adapt their learning preferences, styles and pathways to a specific system (typically a VLE). In such cases learners are required to identify themselves to this system by logging in and are then presented with one rigid pathway through pre-organised materials and activities. Although this provides some degree of freedom for the learner, for example by working through the materials at a time and place that is convenient for them, the learning experience is often heavily controlled, structured, and tracked by the organisation (Fraser, 2006). This is the first stage of Fraser's three-stage model of ePersonalisation (illustrated in Figure 2). In the second and third phases, a more varied and flexible approach to system implementation can lead to a more dynamic form of ePersonalisation (Fraser, 2006)\

Although this model reminds us that technology can, in some cases, limit the impact of the personalisation agenda, it is a model primarily about the choice of system or tools within that system. Whilst these choices are important, it is not the whole picture. A truly personalised learning experience should focus on embracing the five components of the DfES recommendations considering appropriate strategies for learning and teaching, assessment and feedback and learner choice within the curriculum. Personalisation also requires a learning institution to develop as a student-centred organisation with extended partnerships and opportunities for collaborative learning. This will be a significant agenda for any institution with constrained resources and increasing student diversity.

PERSONALISING THE LEARNING EXPERIENCE THROUGH REFLECTION AND EPORTFOLIOS

As educators we need to explore how technology can be used appropriately to meet the multiple goals of the personalisation agenda with the limited resources that are available to us. What is necessary is a technology which will support the centrality of the learners as individuals who are responsible for their own learning and skills development and are, therefore, critically reflective learners. Valued in many subject areas, reflection is associated with deep learning, encouraging learners to synthesise and integrate their learning from a

Figure 2. Levels of personalisation provided through technology. (Sources: Fraser, 2006; Knox & Wyper, 2008).



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wide range of personal experiences and sources and to contextualise their learning (Donaghy & Morss, 2007; Schön, 1987). Reflection encourages learner 'ownership', allowing the student voice to shine through (Moon, 2005).

The reflective process requires the learner to reflect on what they know and to modify and change that knowledge in the light of their new learning experiences. Knowledge is personalised because reflection provides opportunity for 'working with meaning' (Moon, 1999, p. 139) by reasoning and making sense of new information. According to Moon (1999), the roles of reflection in learning are threefold. First, reflection on initial learning is about working with meaning to explore, organise and make better meaning. Second, reflection on the process of representing learning focuses on both the process and product of learning, that is, how one learns and how the learning can be demonstrated. Third, reflection can lead to an 'upgrading' of learning so that it becomes transformative. This transition to transformative learning is one which can involve a critical examination of beliefs, behaviours, perceptions and assumptions so that learning is enriched and becomes deeply personal (Mezirow, 1990).

WHY IS REFLECTION SO IMPORTANT TO LEARNING?

Fook and Gardner (2007) state that the personal perspective in reflection refers to the exploration of assumptions and personal experience through dialogue and questioning and they particularly stress the importance of social context and culture. The need for 'dialogue', both external and internal, as a means of achieving meaningful and deep self-understanding is a view held in common with other educationalists (Brockbank,

Figure 3. ePortfolios can support and improve the personalisation of learning. (© 2008, JISCinfoNet. Used with permission).

McGill, & Beech, 2002; Stefani, Mason, & Pegler, 2007).

External dialogue may occur through discussions, sharing materials and receiving feedback on their experiences and materials with friends, colleagues and/or tutors or even professional mentors. Internal dialogue, on the other hand, is an opportunity for quiet introspection which can provide another useful route to self-examination. It has been recognised that reflective writing can lead to a positive outcome, for example, to understand the process of learning, build theory, resolve uncertainties, defend decisions, empower or emancipate, explore emotions, understand, and plan self-development (Moon, 1999).

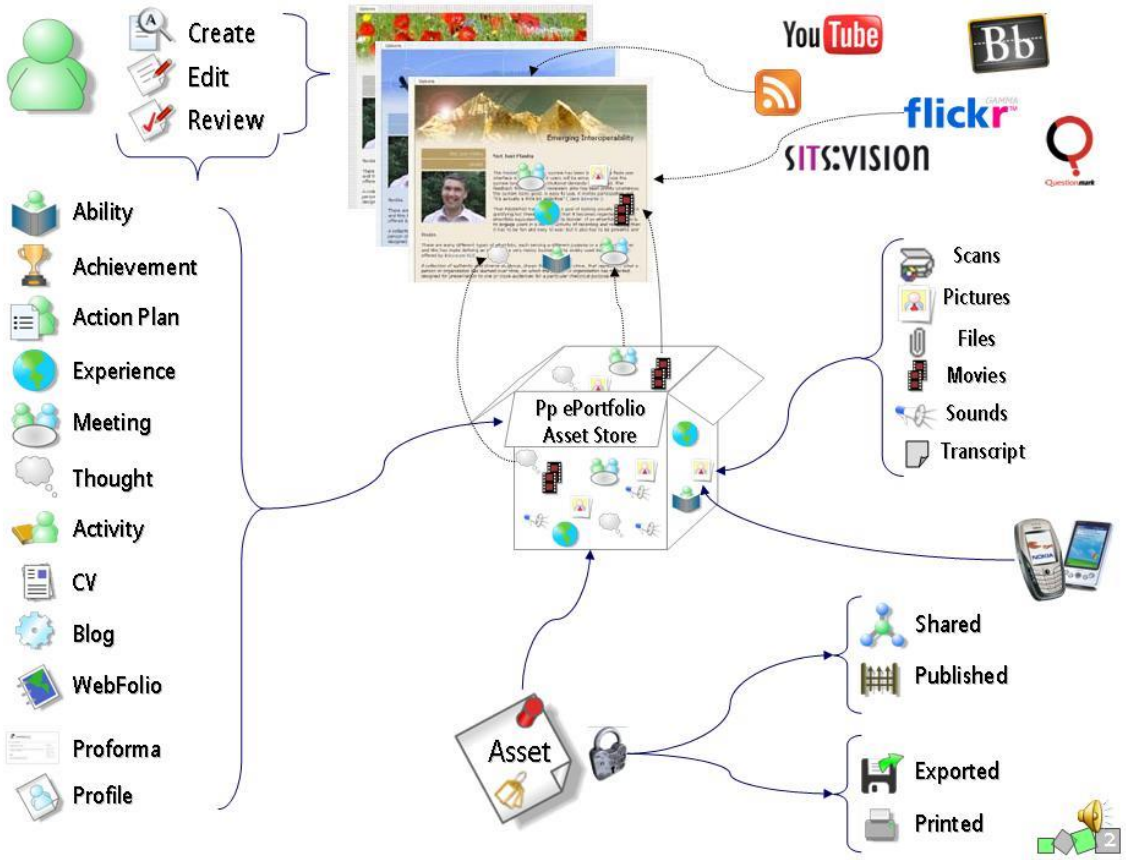
Whilst there are a number of technological solutions available to educators which may help to support learners to engage with and in reflective practice, the most flexible is the ePortfolio – frequently a web-based system – which can be used to record personal thoughts and ideas, for example, through a blog (web log). Learners can then explore these recorded experiences through internal and/or external dialogue with peers or tutors in order to make sense of them and to contextualise them. The tool can also facilitate the development, collection, selection and organisation of digital resources or artefacts, such as photographs and multimedia, which when linked to blogs can both promote and provide evidence of transformative learning (Funk, 2004; Siemens, 2004).

A recent model of learning based on Kolb's (1984) experiential learning cycle developed by JISCinfoNet (2008) demonstrates how ePortfolios can support and improve the personalisation of learning, allowing individuals to develop skills, review and plan their learning, collaborate with many others in diverse settings, receive feedback and consider how their learning may be presented to others as an outward sign of achievement (see Figure 3).

EPORTFOLIOS AND QUEEN MARGARET UNIVERSITY (QMU)

At QMU we are exploring how ePortfolios can be used to support reflective learning and fulfil the five components of the personalisation agenda. QMU is a small institution in Edinburgh, Scotland which has recently gained university title and moved to a new campus. As throughout Scotland, most of our undergraduate programmes, especially in vocational areas, involve four years of study and

Figure 4. The PebblePad ePortfolio. (© 2008, Pebble Learning Ltd. Used with permission.)



typically students start such courses from 17 years of age onwards. Generally, each year of study in a programme is referred to as a level.

Over the last five years technologies such as WebCT (our Virtual Learning Environment (VLE)), TurnitinUK (a plagiarism awareness tool), personal voting systems and Elgg (a social networking environment) have been implemented to meet the three primary goals of the Learning, Teaching and Assessment Strategy (QMUC, 2006) of:

- maximising potential through student-centred learning;
- developing QMU as a community of learners;
- ensuring quality assurance and enhancement.

In 2005, the institution introduced PebblePad as our institutional ePortfolio, which is similar to most ePortfolio systems, having tools such as web-based portfolios (webfolios), online diaries (blogs), competency checkers, online CVs and forms, activity logs as well as links to social software sites, such as Flickr. Learners can share and publish artefacts to the Internet or to a selected audience (see Figure 4). After leaving QMU, learners can either continue to use the ePortfolio system at this institution or transfer it to the site provided by PebblePad.

USING EPORTFOLIOS TO FACILITATE PERSONALISED LEARNING AT QMU: CASE STUDIES

In the following case studies, drawn from health, education and drama, we illustrate how an ePortfolio can be used as a tool to support reflection, address the multiple goals of personalisation and embrace the underlying philosophy of the

personalisation agenda, in a higher education setting. Further information about each of the case studies is provided in Table 1.

The first two of our case studies are from the healthcare professions where reflective practice is an integral part of the learning experience helping students to integrate theoretical and practical work-based learning. Students need to build skills and competencies and then demonstrate their learning and development (personal

Table 1. Case study details

Programme Name of module Mode of study	**Level/s**	**Number of students**	**Tool/s used within the ePortfolio system**	**Role of the ePortfolio**	**Assessment**
Programme BSc (Hons) in diagnostic radiography *Modules* Professional Practice (Level 1) Clinical Practice in Diagnostic Imaging 1, 2 and 3 (Levels 2 -4) Full-time	1-4 in an undergraduate programme	20- 30 students per level	Proforma Blog Thought CV Any other as desired by the learner which are collated into a webfolio	The ePortfolio system is primarily used to develop the skills required for students to reflect upon their learning in the clinical environment and to demonstrate the ability to link theory with practice. The learner can build a robust record of their learning by linking additional evidence of learning to their reflective accounts. Although a minimum requirement regarding structure is suggested, the learner may choose tools and presentation style. The ePortfolio is also used to record clinical activity to ensure appropriate clinical experience for the student throughout their final three years.	Being one element in a series of clinical assessments, the entire webfolio is assessed with the personal accounts of learning being appraised for structure and content. 0% weighting is applied since the webfolio is 'Pass/Fail.'
Programme MSc (pre-registration) Physiotherapy *Modules* Professional Studies Practice-based Learning Full and part-time	Level 1 in a postgraduate programme (Professional studies)	20 students per level	Webfolio Blog	Students use the blog to reflect on their experiences, critical events. These are used to form the basis of a webfolio which is submitted for the assessment.	Students write a 1,000 word reflective account of their learning demonstrating how they have linked their evolving subject knowledge with their experiences in the practice setting. The reflective account is weighted at 100% of the module credit.
	Levels 1 and 2 in a postgraduate programme (Practice-based learning)	20 students per level	Blog, proformas, SWOT analysis which are collated into a webfolio	Students use the ePortfolio system to develop and maintain a portfolio of evidence of learning during their studies. Students are encouraged to reflect on their academic and practice-based experiences using the blog and proformas tools. These experiences are then integrated into an online webfolio which is summated for assessment.	Summative assessment is a 3,000 word Personal Development Plan in which students are asked to reflect on their learning over the previous two years of the programme and to identify outstanding learning needs for their first year of employment.
Programme MSc in Professional Education *Module* Education in Action Part-time	1 in a postgraduate programme	30	Blog Achievement Thought which are collated into a webfolio	The ePortfolio system is used to assist learners in building a profile of their learning that has occurred throughout the module, providing evidence of their use of theory in practice. The system allows learners to link directly evidence with their commentary so that rationale, thinking, decision-making, design and actions are more transparent to them and their tutors. The reflective writing presented by the learners is personal, reflective and in some cases transformational. This offers the opportunity for greater personalisation of the work by allowing latitude in their presentation, choice of evidence and in the methods they use to teach in practice and support their own learners	The whole webfolio including the linked evidence, reflective critical commentary and released personal diary/blog elements are assessed.

Programme Name of module Mode of study	**Level/s**	**Number of students**	**Tool/s used within the ePortfolio system**	**Role of the ePortfolio**	**Assessment**
Programme BA/BA (Hons) Performing Arts Management *Modules* Practice 1 - 4 Full-time	Levels 1-4 in an undergraduate programme	Up to 16 students per level	Blog	Students are encouraged to find their own industry-based placements as soon as they are ready – usually in year 2. They need to reflect extensively on their learning experiences whether they are industry based or developed around the work of the School of Drama. An online learning journal (a blog) helps formalise the learners' reflections making their reflections more explicit and providing a focus for meetings with their tutors and peers.	The learning journal forms 40% of the mark in the first year, 50% in year 2 and 60% in year 3. Year four is a written journal and dissertation. The journal is 50% of the overall mark.

Note. Further information about these case studies is available at: http://www.qmu.ac.uk/eportfolio/

and professional) through the achievement of specified outcomes (Friedman Ben David et al., 2001; Jasper & Fulton, 2005). In each of these case studies learners spend a significant amount of time outwith the educational institution in the clinical setting where they are expected to develop skills of critical appraisal, evaluation and analysis in a multi-disciplinary work environment. Previously, assessment through paper-based portfolios, reflective logs and proformas have provided learners with opportunities to share their personal reflections upon their learning and development, to show their ability to link theory to practice and to demonstrate evidence of this development from a wide range of clinical settings. Our case studies show how paper-based portfolios have been moved online and we discuss the advantages and challenges of this change with regard to the personalisation agenda.

Case Study One: BSc (Hons) in Diagnostic Radiography, Levels 1 – 4

Our first case study illustrates how ePortfolios are used for summative clinical assessment of learning in a BSc (Hons) in diagnostic radiography. Approximately 20-30 students in each of the levels 2 – 4 create a reflective webfolio to demonstrate their learning and personal and professional development in the placement setting. The tutor provides a model (see Figure 5) which guides the students in developing their personal webfolio and selecting and organising the evidence they have chosen for their assessment.

The elements of the assessment are:

- *A mandatory webfolio* (which is assessed 'Pass or Fail') containing
    - Online proformas which are records of clinical experience (see Figure 6). Minimum requirements are specified to achieve a pass, for example, level four students must demonstrate that they have performed a total of 40 mobile examinations of the chest and abdomen, 30 aided and 10 unaided by the end of semester two. The primary purpose of the proformas is to encourage the learners to record as many and as wide a range of procedures and techniques as possible to allow them to demonstrate the full extent of their clinical experience.
    - Reflective pieces about learners' experiences whilst in clinical practice. These accounts must include a full

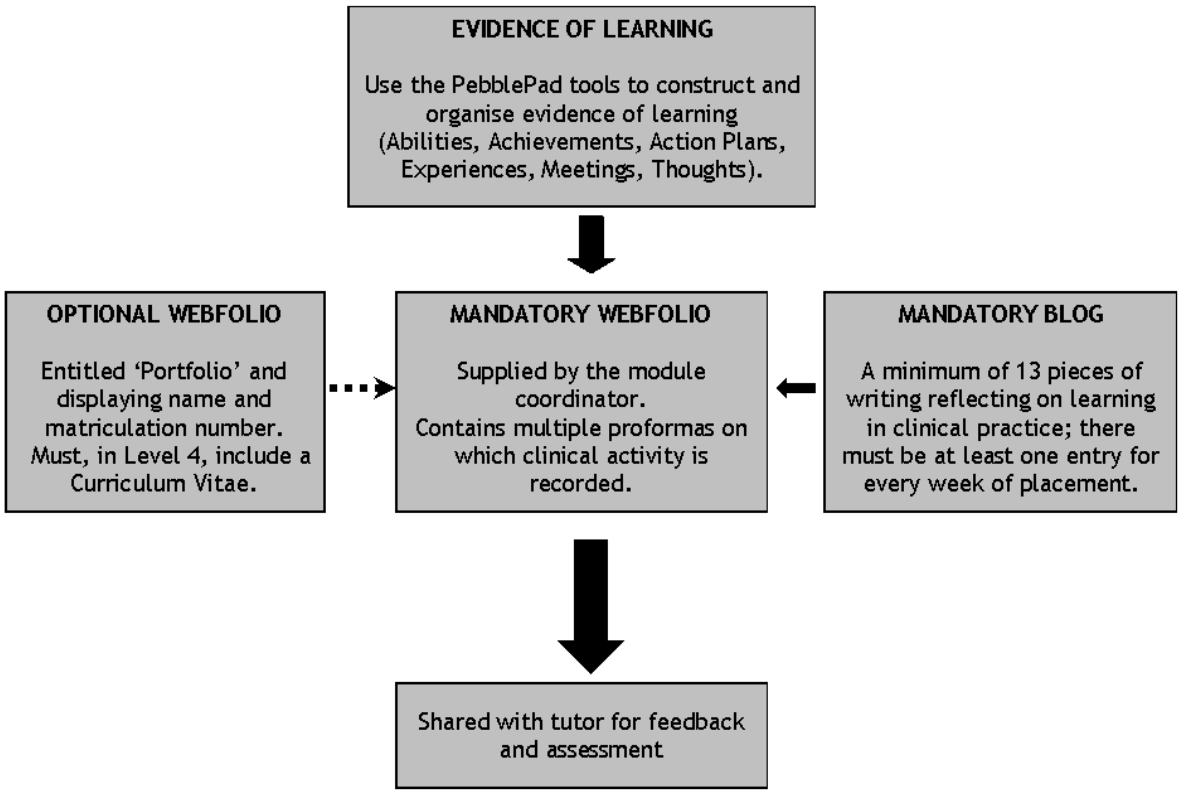


Figure 5. A model for webfolio development in diagnostic radiography.

description of, at least one, interesting or challenging procedure, experience or encounter which calls upon blog entries for evidence.

A template of this mandatory webfolio is developed by the tutor and shared with the learners.

- *A mandatory blog* (which is assessed 'Pass or Fail') containing:
  - a minimum number of selected reflective pieces about the learner's experiences in clinical practice presented in a coherent order. Each account must include a full description of an interesting or challenging procedure, experience or encounter. These reflections will have originally been created in a personal blog where the learner is encouraged to reflect upon all their experiences in the clinical setting. It is hoped that these private reflections will support the learner to engage in an internal dialogue about their learning from such experiences and to plan for future learning. The learner selects a specified number of entries from the personal blog as evidence in the mandatory blog.
  - further evidence of learning, such as a list and content appraisal of all clinical tutorials.

Multimedia evidence such as images, video and web links are encouraged. However, learners are advised to make explicit the relevance and purpose of all the evidence that they provide. The mandatory webfolio and the blog are shared with the tutor for assessment. Some students elect to create an additional optional webfolio to act as a title page or index with links to the two mandatory elements. In level four of their diagnostic radiog-

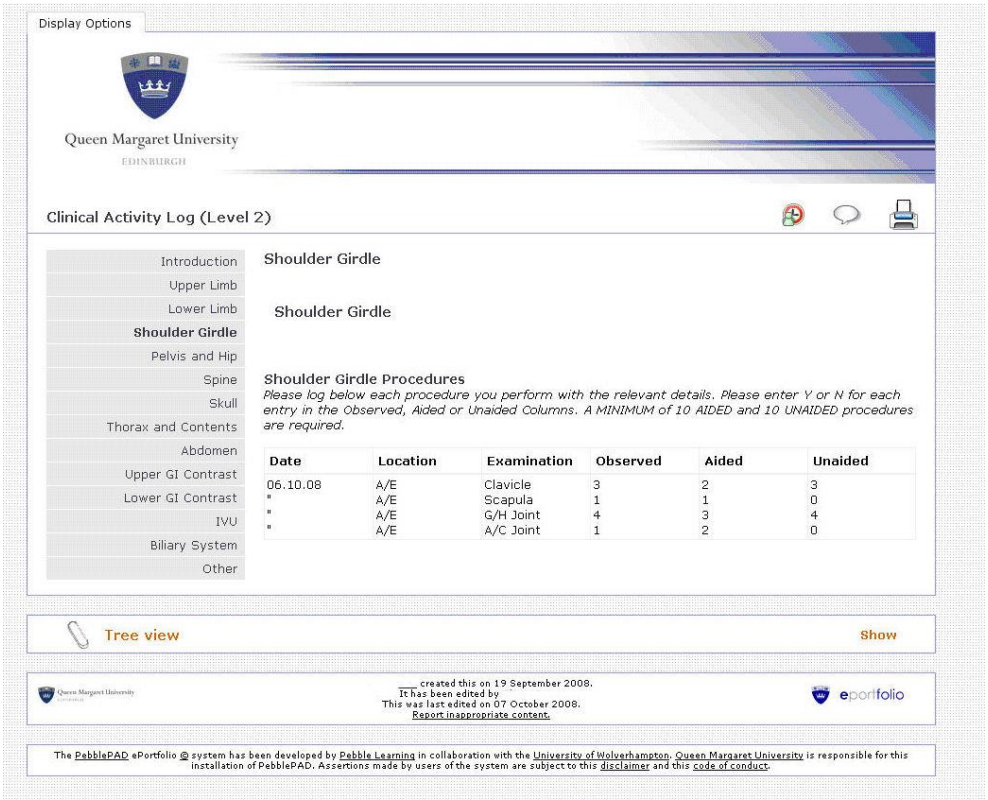


Figure 6. A clinical activity record (Proforma) within a webfolio.

raphy studies, students start to apply for positions and write covering letters and CVs which they send to managers. Students may create an online CV in the ePortfolio; this is a document that could be shared with a future employer.

All of the learners are provided with a demonstration of the tools within the ePortfolio system (see Figure 4). Although not all of the tools are required for assessment, many may assist learner reflection. An example is the achievement tool which requires the learner not only to identify areas of success and development but also to provide evidence of learning gained by reflecting on the achievement. Learners are encouraged to explore these tools during the introductory session and to choose those appropriate for them and their learning style. Learners are also shown how to share their webfolios with peers and are encouraged to work collaboratively. However, not all learners opt to use this facility preferring to engage in an internal reflective dialogue. Others like to share with peers and the comments and feedback provided are recorded on the webfolio and can be viewed during the assessment process. Some students have difficulty with both the technical aspects of the software and/or the key concepts of evidencing clinical activity and the reflective process. The tutor facilitates additional group and one-to-one sessions to prepare students adequately for the requirements of the assessed webfolio; however, for a busy academic, there are clear tensions between the desire to provide support for personalised learning for between 20-30 students and the constraints of an overcrowded timetable.

To help resolve this tension, central services provide a weekly drop-in session for students to discuss issues when using the ePortfolio system; this seeks to reduce the amount of technical support required of the tutor.

Additional support for students is also provided through WebCT which holds a range of reference materials for students whilst in the university and on clinical practice. Diagnostic and professional practice PowerPoint presentations from all levels of the programme are made available, as well as an illustrated glossary for reference, clinical handbooks, assessment forms and examples of previous examinations. The tutor uses the announcement and noticeboard tool on a regular basis to inform students about forthcoming events, assessment deadlines and new resources.

Extensive, written formative feedback through the comment tool in the ePortfolio system is provided at least once, and often twice, on draft webfolios. Typically, the focus will be on the quality of the writing, descriptive content, identification of key learning experiences, level of reflection and degree of evaluation of practice. Additional evidence of learning presented by the student is also scrutinised and comments on its value given. Students are asked to acknowledge the feedback, also using the comment tool, and to retain these comments as part of the summative assessment. This way, the tutor can decide whether or not the original feedback has been useful to the student and whether or not changes and improvements have been made. For example, learners at level 2 submit a draft webfolio following the first and second blocks of clinical placement with the tutor offering feedback on strengths and areas for improvement. Students are asked to engage in reflection on this feedback and to outline their plans for future development in the light of the tutor's comments.

The webfolio is assessed at the end of semester 2 and approximately six to eight webfolios of the overall 20-30 can be marked in a day. An external assessor typically takes two hours for each level. All are graded either pass or fail. Some learners will produce the minimum requirements and are awarded a 'pass' which is the same grade as those who have submitted an excellent piece of work. This may appear unfair, but mirrors the accreditation provided by the Health Professions Council (HPC, 2007) which will either re-accredit or not - they will not award distinctions for effort. It also reinforces that learners are responsible for their own learning and will need to continue with this in their professional life through continuing professional development (CPD). It is clear that those learners who perform well in the webfolio are also likely to do well in other summative assessments; this may, therefore, predict academic and future professional success.

The quality of reflection within the webfolios and blogs increases with the level of the learner. Level 2 learners tend towards the descriptive with incremental development of reflection, critical appraisal and evaluation of practice over time. Some students never fully 'get it' whilst there are the natural reflectors that produce deep, insightful reflections from day one. The mandatory reflective writing contained within the blogs or webfolios are the elements that encourage students to develop this skill. Good feedback, particularly in the early stages, is vital to this development; hence the need for students to respond to feedback in level 2 to ensure they are engaging with feedback especially if it focuses on reflection.

For the future it is anticipated that more formal links to external partners will be provided through the ePortfolio. Proformas, currently paper-based, are completed by placement supervisors for staged and continuous assessment purposes. Learners, at present, usually scan such documents after completion to include in the webfolio as examples of evidence. Such forms could be completed online within the ePortfolio system by the supervisors. However, such initiatives may be limited by restricted access to computers within the National Health Service.

Case Study Two: MSc (Pre-Registration) Physiotherapy Programme, Levels 1 – 2

The MSc is a two-year programme for science graduates who wish to pursue a career as a physiotherapist. Many of the graduates have high-level subject knowledge in related areas such as anatomy and human physiology but have little, if any, experience of how to work as a reflective health practitioner in a multifunctional team. The core module, Professional Studies, runs in semester 1 and 2 of level 1, which is the first year of the two-year MSc programme, with each semester being 14 weeks. The five core Practice-based Learning modules run as six-week placements in the clinical environment in semester 3 of both level 1 and 2 of the programme. Both the Professional Studies and Practice-based Learning modules aim to support students in developing a reflective approach to their learning, both in and out of the practice setting. The ePortfolios in these modules are used as a space where the 20 learners can link all aspects of their learning together in one place. WebCT is used by the tutors to provide additional supportive materials, such as handbooks, narrated PowerPoints and details of placements. Online asynchronous discussions are also a vital part of the programme encouraging students to share experiences especially about the placement setting.

At the start of the programme, in the Professional Studies module, learners are introduced to reflection, the advantages of reflective writing and the importance of becoming a reflective health practitioner. They are asked to identify their learning styles and shown how models such as Kolb's experiential learning cycle can help support their development in writing and reflecting. Learners are encouraged to explore their assumptions and personal experience through dialogue and questioning and to use reflective writing as a vehicle for this. In semester 1 of level 1, students shadow an undergraduate student for half a day in a clinical site. This allows them to discuss and share their thoughts on the ethical and professional issues encountered by physiotherapists in clinical practice with a fellow student. Later they will record this experience and then through quiet introspection start to explore in greater depth their learning, their emotions related to the experience and plans for future self-development.

In the first semester, students are introduced to the ePortfolio system and encouraged to use the different tools as a medium for generating, selecting and collating their evidence which they can then integrate into their reflective accounts in the webfolio. Some learners, not all, keep a reflective private blog on a regular basis outlining their reflections on their learning experiences. For example, their reflections on their clinical visit as well as their generic learning from self study, tutorials and experiences outwith the institution. Such use of the blog supports learners with their internal dialogue about how these experiences relate to their theoretical learning within the institution and their expectations of life as a physiotherapist. Extracts from their blog are then included to support their personal reflective accounts of learning in the webfolio. Learners may also use customised proformas, such as those available on their professional body's website, the Chartered Society of Physiotherapy (CSP). The CSP has developed a series of proformas, such as templates for a critical incident report and SWOT analysis (strengths, weaknesses, opportunities and threats) which are available to all members of the CSP, including student members. Such forms can be housed in the ePortfolio system and used as appropriate as evidence of learning and for the identification of future learning needs. Finally, learners are shown how to customise the webfolio, how to select materials and are provided with guidelines about the type of evidence that is required. They are also shown an exemplar webfolio developed by the tutor that helps them to visualise their own webfolio and start to plan its structure.

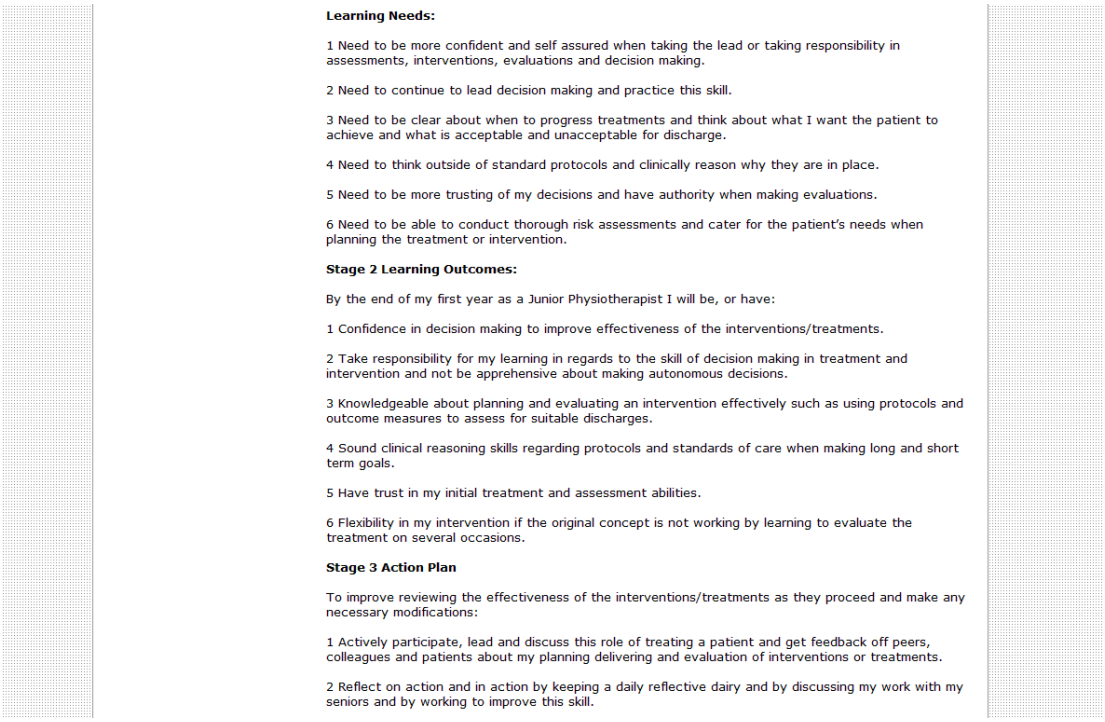
In the summative assessment for the Professional Studies module at the end of semester 2, students are asked to write a 1,000 word reflective account of their learning, describing critical events and outlining learning outcomes which should demonstrate how they have linked their evolving subject knowledge with their experiences in the practice setting. The reflective account is weighted at 100% of the module credit. This assessment allows tutors to provide students with feedback on their reflective writing and generates material which students can draw upon within their summative assessment of the practice-based learning placements.

The summative assessment for the final practice-based learning module, submitted at the end of the programme, is a 3,000 word Personal Development Plan (PDP). This assessment is weighted at 50% of the final Practice-based learning module credit. The assessment is staged through the Practice-based learning placements with students undertaking a formative portfolio task in each placement. Students obtain formative feedback from their peers, for example through sharing a SWOT analysis in their third placement and feedback from academic staff through undertaking a critical incident report at the end of their second practice-based learning module which is submitted at the end of level 1. Evidence of learning from a range of experiences must be provided. Students also identify their learning needs and develop an action plan describing future personal development. To further contextualise the second-year assessment, and provide the students with experience which could be beneficial in terms of their employability, the students are asked to focus on their skills and learning and development needs in relation to a post-qualification job outline (see Figure 7). These assessments are created in the webfolio tool and shared with the tutor.

The advantage of using the webfolio tool is that it allows students to access and organise an ongoing portfolio of evidence, including evidence of reflection, whilst in the academic and clinical setting. The blog function and the profession specific proformas are particularly useful to students on placement as a resource for recording informal reflections on clinical experiences. Given that the placements are undertaken over a two-year period this means that students can quickly access archived material which can form the basis for further reflection. In addition the webfolio tool allows students to share work with their peers and academic staff when they are remote from the academic institution. The feedback from peers and academic staff and the students' reflections on this, encourages a deep, personalised learning approach.

Case Study Three: MSc in Professional Education, Module Education in Action

Our third case study is taken from a master's programme in Professional Education designed to develop theory and practice of teaching at higher education level. The programme is accredited by the Higher Education Academy and the Nursing and Midwifery Council; it is primarily designed for professionals with a high level of subject expertise and experience but who wish to enhance their professional development in teaching or training. Students are from diverse professional backgrounds and cultures and have a varied level of technological experience. The core introductory module on this programme, Education in Action, encourages learners to spend time studying an extensive range of theories, approaches, models and strategies for learning, teaching and assessment and evaluating practice. Participants are required to be engaged in some teaching, to allow application and integration of learning to the workplace. Thus the module is grounded in the dynamic process of supporting individuals to build on their expertise and experience to enhance skills necessary to teach effectively in a complex changing educational environment and



Learning Needs:

1 Need to be more confident and self assured when taking the lead or taking responsibility in assessments, interventions, evaluations and decision making.

2 Need to continue to lead decision making and practice this skill.

3 Need to be clear about when to progress treatments and think about what I want the patient to achieve and what is acceptable and unacceptable for discharge.

4 Need to think outside of standard protocols and clinically reason why they are in place.

5 Need to be more trusting of my decisions and have authority when making evaluations.

6 Need to be able to conduct thorough risk assessments and cater for the patient's needs when planning the treatment or intervention.

Stage 2 Learning Outcomes:

By the end of my first year as a Junior Physiotherapist I will be, or have:

1 Confidence in decision making to improve effectiveness of the interventions/treatments.

2 Take responsibility for my learning in regards to the skill of decision making in treatment and intervention and not be apprehensive about making autonomous decisions.

3 Knowledgeable about planning and evaluating an intervention effectively such as using protocols and outcome measures to assess for suitable discharges.

4 Sound clinical reasoning skills regarding protocols and standards of care when making long and short term goals.

5 Have trust in my initial treatment and assessment abilities.

6 Flexibility in my intervention if the original concept is not working by learning to evaluate the treatment on several occasions.

Stage 3 Action Plan

To improve reviewing the effectiveness of the interventions/treatments as they proceed and make any necessary modifications:

1 Actively participate, lead and discuss this role of treating a patient and get feedback off peers, colleagues and patients about my planning delivering and evaluation of interventions or treatments.

2 Reflect on action and in action by keeping a daily reflective dairy and by discussing my work with my seniors and by working to improve this skill.

Figure 7. Example of webfolio where the student has identified personal learning needs, learning outcomes and an action plan for their first year in employment.

to use theory and research findings to develop their own practice.

This transparent focus on continuous personal and professional development through critically reflective self-appraisal of practice within a complex and changing environment requires an assessment vehicle which allows individuals to 'tell their own story' – a personalised, customised reflective portfolio of practice. The portfolio is based on the concept of assessment *for* learning (QAA, 2007), integrated with all learning activities (Biggs & Tang, 2007) and gives students complete responsibility for it. The criteria specify there should be evidence of: critical reflection and personal insight based on systematic evaluation of practice; deep knowledge and application of educational theory and principles of good practice; ability to critically evaluate and debate relevant research and scholarship. Evidence is required for specific justification of appropriate choices and decisions in relation to teacher/learner context such as subject area. The nature of the students and the cultural context is required to be substantiated along with examples of good practice in teaching, assessment, support and feedback to their own learners. Therefore, students are expected to provide sound rationales for strategies, applications, tools and materials which they choose or develop in the course of their teaching. They may select whatever evidence is most relevant, of highest quality and in the most appropriate format – text, diagrams, pictures and video. They are expected to evaluate and track their progress by frequently reflecting on self, peer and tutor feedback thus planning for their further development. Opportunities for external and internal dialogue to underpin this reflection are continuous and varied since they are 'built into' the design of the module.

At the beginning of the module, in depth group discussion of the concepts of reflection, reflective practice, evidence-based practice and portfolio-building occurs so learners can begin their portfolio journey. Technical training is part of the introductory sessions to ensure learners feel competent to undertake the portfolio development, as many have limited experience of working in a technological environment. In these sessions, learners are provided with guidance on how to customise the webfolio and how to upload evidence that is appropriate to their individual learning.

The module is based on a blended learning model in which learners engage in highly interactive classes once a month and in online activities during the intervening periods. The guiding principles which underpin the module is that tutors always have a guiding and facilitative role, attempting to give as much leadership and ownership of discussion as possible to students. All electronic communication, group work, discussion and posting of work during the interim periods are facilitated through WebCT so that students have control over when and where they engage with each other online. Although online activities are broadly outlined by tutors, students have choice over topics, modus operandi and presentation format. The products of this work can also be transferred from WebCT into each individual's webfolio as evidence of learning. For example, a group critique of assessment strategies presented in poster format may lead to the adoption by an individual of a different assessment tool which may be implemented and evaluated as evidence in the webfolio. The story of that journey may become part of the reflective commentary.

Throughout the module learners are encouraged to engage with the tools within the ePortfolio, integrate it with their interim activities and use it for on-going external and internal dialogue and reflective writing. At the end of the year, learners bring together these reflections and select appropriate evidence to complete their webfolio, which demonstrates their learning and development, to include skills, knowledge and plans for their on-going future continuous professional development.

All the webfolios are highly individual, often very creative in their presentation of evidence, and contain materials that are completely personalised in that they refer only to the learners' perspective, values, strategies and critical evaluation of themselves. The electronic system allows learners to link directly evidence with their commentary so that rationale, thinking, decision-making, design and actions are more transparent to them and their tutors. There is no question that the reflective writing presented by the learners is personal, reflective and in some cases transformational, with the ePortfolio approach freeing the learner from the traditional writing required of academic study. This offers the opportunity for greater personalisation of the work by allowing greater latitude in their presentation, choice of evidence and in the methods they use to teach in practice and support their own learners. For example, learners tell the story of their learning underpinning it with theory, and illustrating their learning with personal selection of episodes of significance to them. These may be positive or negative episodes but the ePortfolio allows the freedom of selection. The electronic nature of the ePortfolio seems to allow students to feel more able to disclose exciting or uncomfortable personal experience than if they were writing traditionally.

Case Study Four: BA (Hons) in Performing Arts Management.

Our final case study is taken from performing arts management. In this programme students combine practical activity (working in the placement setting) with their academic studies: each contributes 50% to the overall mark for the programme. The students are encouraged to find and undertake industry-based placements in order to develop an in-depth understanding of the processes of performance management in the theatre setting.

Reflection and reflective writing is core to this development. At the beginning of the programme, learners (approximately 16 per year) are introduced to the blog tool within the ePortfolio system which they use to develop and maintain an online journal. Extracts from this journal are shared with peers and tutors for feedback to support internal and external dialogue and to encourage learners to reflect on their personal learning journey.

Initially, the tutor provides an extensive introduction to the purpose of the online journal, which is to document and record learner experiences, outline future learning needs and to applaud achievement and growing self-awareness. The tutor explains that the students need to develop a 'management head' for their professional roles and that the online journal is a 'mental gym' where they can record critical events, reflect on them through thoughtful internal dialogue and then, if required, shared with the tutor for feedback which is usually written and occasionally face-to-face. They are encouraged to write about new knowledge and skills that they have developed, especially when on placement, and to relate these to their developing theoretical knowledge of the subject area.

The online journals are then marked; in the first year they form 40% of the mark, in year 2, 50% and in year 3, 60%. In year four students submit a written journal which contributes to 50% of the mark. Each learning journal is marked against a set of criteria (see Table 2) and points are allocated to each of the criteria.

Through the continued use of the blog, constant self analysis and writing, the tutor has observed significant learner development especially in the ability to think strategically and to plan for future activity which leads to purposeful outcomes. Students have started to assess their own abilities and to link their studies with their future career development. Not all students have found the experience fruitful or engaging. Some dislike using computers and others have a lack of understanding of the purpose of self analysis. There is often a resistance to what may be seen as a chore – writing a reflective online diary – especially in the early stages of the programme. Learners also talk about the 'fear of the blank sheet' and are reluctant to

Table 2 Criteria for assessment and allocation of points for the learning journals in BA (Hons) performing arts management

Criteria for assessment of online learning journals	
Does the student demonstrate an understanding of learning outcomes commensurate to their experience and time on the course? (20 points)	
Does the student demonstrate an understanding of good management practice commensurate to their experience and time on the course? (20 points)	
Is there evidence of self analysis demonstrated throughout? (20 points)	
Does the journal demonstrate the student's attention to detail, taking into account any problems a student may have with the written word and presentation? (20 points)	
Does the journal draw from experiences and examples of activity demonstrating that it has been written using entries compiled across the academic year? (20 points)	
Allocation of points for the learning journal	
0 to 5 points	little evidence
5 to 10 points	good evidence
10 to 15 points	excellent evidence
15 to 20 points	outstanding evidence

share reflections about an experience that was not successful which results in learner overcompensation by writing too much. The tutor provides extensive feedback, especially at the beginning of the programme, challenging learners to explore what happened in uncomfortable experiences, like working in dysfunctional groups, their emotional responses and to consider how they will handle similar incidents in the future, especially in the intensive working environment of the theatre. The most effective way to avoid the negative response has been for the tutor to work consistently with students individually. By supporting students' understanding of personal development, the learning journals become more pertinent and the resistance to using ePortfolios lessens.

DISCUSSIONS

Our case studies demonstrate that through the judicious use of ePortfolios as a tool to support learner reflection we are responding to the multiple goals of personalisation and embracing the underlying philosophy of the personalisation agenda, as appropriate for our institution. In all of our case studies, learners have significant choice in what they learn, and how and when they learn and, as well, how they demonstrate their learning. By the latter stages of their programmes, our learners are beginning to take responsibility for how they learn and also for what they need to learn – key skills for lifelong learning.

We now return to the five components of personalisation and discuss how we have engaged with these in our case studies.

Assessment for and of Learning

In all of the case studies, innovative approaches to formative and summative assessment have tried to combine assessment 'for' and 'of' learning whilst meeting, in three of the four case studies, the assessment guidelines provided by the professional bodies. Learners use the ePortfolio to present their personal learning journey and provide tangible evidence of learning. Blogs or other digital artefacts, such as videos or images, can be used as evidence to show growing self-awareness and critical self-evaluation and identify areas for development and plans for future learning, for example as demonstrated earlier in Figure 7. Such types of assessment add validity, truthfulness, meaningfulness, and authenticity to the assessment procedure.

Feedback, formative and summative, individual and group, is an essential element of the assessment process. The ePortfolio offers educators extensive opportunities to provide both formative and summative feedback and for students to reflect and act on this feedback. In all the case studies, formative feedback is used to question and probe learner's assumptions and encourage deep learning. Early conversations with students in radiography, physiotherapy and education suggest that they value opportunities to submit their draft webfolios for feedback, with motivation increasing through the provision of reassurance and encouragement about performance. Performing arts management learners find that the extensive feedback on their blogs whilst away from the institution keeps them focussed and develops their 'management' head.

However, learner engagement with the ePortfolio does not always need to be assessed. Not all blog entries are submitted for assessment such as in physiotherapy and diagnostic radiography; students are encouraged to use the ePortfolio tool to support their individual learning and personal development.

Effective Teaching and Learning Strategies that Develop the Competence and Confidence of Every Learner

All our case studies show how ePortfolios can be used in conjunction with innovative learning and

teaching strategies to engage learners, improve confidence and lead to increased competence, especially our education case study, in the higher education setting. However, critical to the success of these case studies is learner engagement with the reflective process. All of our learners at the early stages of their studies are introduced to reflection and the purpose of reflective writing. In the education case study, learners are given examples of writing and asked to work in teams to discuss if they consider the exemplar to be reflective, academic or descriptive. In the radiography and physiotherapy case studies, webfolio templates are developed by tutors and shared with students; these are accompanied with guidance about how to select evidence and how to link this evidence to their reflective accounts.

The flexibility provided by the ePortfolio affords learners many opportunities to engage in the reflective process. With its wide range of tools, learners can select the appropriate one for them, their preferred learning style and level to develop their confidence in using the system to support reflection. In radiography learners are offered guidance about the different ways to use the blog tool for reflection. Each posting to the blog is called a 'thought' and can be constructed in two ways:

- a student who is skilled in the reflective process may utilise the simple 'journal' option and write a reflective piece (a thought) with no automated prompts from the system;

- the learner requiring more guidance might select the 'reflective cycle' option which provides a step-by-step process to writing a reflective thought. At each stage the learner is provided with hints and tips about what they may wish to include in their reflective account.

Curriculum Entitlement and Choice

The underpinning curriculum design in each case study has sought to provide as much choice as possible for learners through the approaches to learning and teaching and assessment. However, in many professional programmes in higher education, such as health and education, learning outcomes, core content and structure and allocated time spent in the clinical setting may be subject to regulation by the professional body. Fortunately, the use of the webfolio provides some scope in how outcomes can be met, particularly through choice in the development, selection, organisation and presentation of the student's work. The blog allows learners to reflect on personal experiences and make sense of their learning in the different settings.

A Student-Centred Approach to School as a Learning Organisation Rather Than as a Rigid Physical Entity

In the higher education setting, timetabling and scheduling of lectures, seminars, tutorials and workshops provides many challenges for any institution. Our case studies have not sought to tackle this issue which is often outwith the control of a programme. In our new campus we provide a wide variety of innovative spaces for learners, as individual and as groups, to discuss and reflect on their learning, for example, students can book rooms within our learning resource centre to come together, explore their learning in the placement setting and then record these dialogues within their blogs (QMU, 2008).

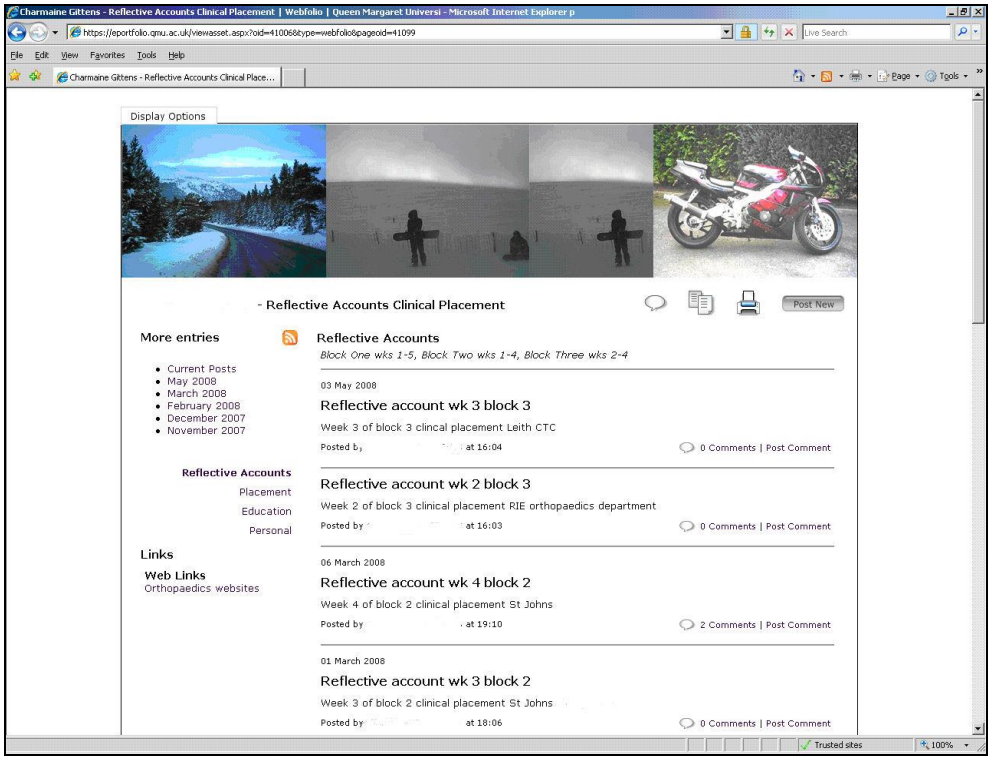
Our learners spend a considerable amount of time in the placement setting and we have sought to maximise the flexibility afforded by this learning. We have focussed our limited resources on the implementation of a student-centric web-based ePortfolio system that can support a personalised learning experience and give some

sense of control and ownership to our learners, wherever they may be learning. This contrasts with our institutional VLE, which in most of our case studies has been developed and maintained by tutors to provide extensive support to learners in a very structured and controlled environment. The VLE is used to provide an interactive learning environment through the thoughtful implementation of online discussions, quizzes, videos and narrated PowerPoints but these are controlled, selected and managed by the tutor. The ePortfolio differs to the VLE by affording more choice for our learners in how they engage with the system. There are more opportunities for customisation of fonts, images and animations, as seen in our radiography example (see Figure 8). In this case the learner has developed an individual webfolio through the innovative use of photographs, which reflects personal interests.

The Development of Strong Partnerships beyond the Institution

Like any institution, QMU has developed extensive partnerships with the institutions that provide placement opportunities for our learners, such as hospitals and organisations running events and festivals. However, the ePortfolio is proving to be a vehicle for strengthening these links and in some cases developing new ones. Blog entries are shared with tutors and sometimes with clinical supervisors for feedback and dialogue. In a

Figure 8. Personalised but unstructured radiography webfolio



community and public health nursing programme, supervisors provide feedback directly into a shared webfolio. For the future it is hoped that unnecessary paper-based form-filling can be transferred to the ePortfolio and completed in situ by supervisors. Not only is this bringing these institutions in contact with the ePortfolio system but also with our approach to learning and teaching and the institution itself.

Learners have shown a keen interest in using webfolios to demonstrate evidence of learning to potential employers and to share online CVs. Learners particularly like the fact that when they share a webfolio it states that it is housed on the institution's ePortfolio system and provides a type of formal link to where they have been studying.

Our case studies illustrate the different ways that we have engaged with the five components of the personalisation agenda through the use of reflection supported by an ePortfolio. For each institution, their engagement with these areas will vary according to their subject area and their strategies for learning and teaching, as well as their engagement with the ePortfolio system. Institutions may wish to use these components as a guide to planning the implementation of ePortfolios to support personalisation.

THE CHALLENGES OF PERSONALISATION

Although our case studies demonstrate that many of our learners have used the ePortfolio to engage in reflection and meet some of the goals of the personalisation agenda, issues have emerged including:

- lack of learner engagement with the reflective process;
- increased tutor time to support personalisation;
- limited learner access to, and use of, technology;
- a lack of dynamic ePersonalisation.

In this section we discuss these issues and offer some suggestions for those implementing ePortfolios to support the personalisation agenda.

We cannot assume that because our learners are using the technology to record and reflect on critical events that reflection leading to deep learning is always taking place. Many of our learners, especially in the early stages, did not possess the skills and ability to be reflective (DiBiase, 2002) and did not always enjoy the reflective process. Others did not immediately understand the benefits and relevance of reflection in higher education and wanted, and expected, a more didactic approach to learning and teaching. In physiotherapy, students often found it difficult to engage with the reflective process when they were experiencing a steep learning curve in the skills and knowledge required to complete their programme of studies. To cope with this, they often took a strategic approach to learning and disliked having to make additional time to reflect, write reflectively and to use these reflections to prepare for future learning needs. Assessment plays a central role, focussing the learner on the task and helping to engage them in the reflective process. In some of our case studies, such as radiography, this had led to debate about whether to allocate a percentage of the total module mark to the webfolio after developing robust assessment criteria based upon content, structure and presentation such as that in drama. However, it is often only after our learners have completed their studies that they start to understand the purpose of reflection and its role in their continuing professional development; in some cases, this has led them to opt to use our ePortfolio system after graduation.

Learners at the early stages of their studies often will lack confidence and experience and need structured personal development support

(Beetham & Strivens, 2005). To overcome such issues, having a framework for structuring and supporting reflective accounts seems most productive, if not essential. Such frameworks suggest using a reflective model (Boud, Keogh & Walker, 1985; Johns, 1994) or providing 'prompter' questions to guide thinking and establish a kind of dialogue between the learner and the question. Rees, Forbes & Kubler (2007) have developed an excellent set of questions to enable learners to reflect on a wide range of attributes such as communication, leadership, judgement, creativity and learning and development; these could be used in conjunction with the more structured elements of the ePortfolios such as the action planner. The ePortfolio system can also assist the tutor in scaffolding the learner experience through the sharing of templates and exemplars, which guide the learner in the development of their reflective accounts. Sharing blog entries or webfolios in the early stages of a programme also provides an opportunity for feedback and helps guide the learner, as in the physiotherapy and radiography case studies above. Given the apparent importance of dialogue to facilitate and deepen reflective thinking, it is advisable for tutors to design in as many opportunities for feedback as possible.

Providing such personalised feedback has had significant resource implications for tutors. In radiography level 1, students in their induction session were asked to create a blog and reflect upon a key learning experience in their first weeks at the institution. This was then shared with the tutor. The tutor required approximately six hours to provide appropriate individual feedback, for a cohort of 35 students. Although this engaged new and especially vulnerable students, and substantially improved their motivation, it significantly increased tutor workload. In the first iteration of using the ePortfolio, tutors in our education case study found marking online a challenge and initially required more time to navigate systems and familiarise themselves with the structure and organisation of the webfolios compared with a paper-based portfolio. Protected time is essential for tutors to familiarise themselves with the system and to explore how it may be used to fulfil the personalisation agenda without a significant increase in their commitments to the programme. For example, peer feedback is now being explored, accompanied by more limited and focussed tutor feedback in drama. In radiography, in early trials, a learner submitted an individualised webfolio (see Figure 8) and although the quality of presentation was high and the content appropriate, the structure was so difficult for the assessor to navigate that the evaluation required in excess of two hours. Learners in this subject area are now provided with a model (see Figure 5) to guide them and to provide a more consistent structure for tutors to follow.

It is expected that technology will address the challenges of personalisation but in some cases it seems that by embracing technology in learning, the very inequities that personalisation is trying to address are being reinforced. Some of our education students felt disadvantaged simply because access to technology was a challenge in busy households with only one family computer. They would struggle to have access to a computer which was required for homework, family communication and leisure activities. Others lost work through their lack of knowledge about backing-up materials prior to uploading into the ePortfolio system. Physiotherapy, radiography and education students struggled to access the ePortfolio on clinical placement as institutional firewalls inhibited and sometimes prohibited access to the system. Performing arts management students requested access to the ePortfolio system through mobile phones, wanting to record experiences as they happened, and then to reflect on these whilst on placement in theatres away from the institution.

For each of our case studies, a practical hands-on session was required to help familiarise students with the ePortfolio system. Afterwards, top-up sessions were offered and in some cases, one-to-one sessions, as well as weekly drop-in

sessions. This was time-consuming for support and academic staff, but allowed tutors to prepare learners for the challenges of using technology intensively for their studies. In the education and physiotherapy case studies, students were warned about the issues of firewalls and as part of their action planning for the modules were asked to explore different options for access which included working from libraries and internet cafes. Early trials of our ePortfolio system in other institutions have shown that mobile devices can be used to add blog entries (PebbleLearning, 2008) and for the future may improve access. Despite such technological challenges, by the end of their studies, many of our learners were thrilled at the development of their IT-skills through engaging with the tool and this led them to feel more confident when using technology in their professional and personal lives, and has led to them opting for alumni access to the system.

Our case studies demonstrate technology supporting learner reflection, but we acknowledge that it is not true dynamic ePersonalisation as envisaged by Fraser (2006). Our learners currently do not have a choice of the system they wish to use and they may prefer to interact with a familiar social networking site such as Facebook for their learning, reflecting and presentation of materials. In such cases, it would be anticipated that the institution – the tutor and the administration – would engage with the learner's preferred system. Such an approach has many advantages but raises issues such as the reliability of the chosen web 2.0 service – will the social networking site be available throughout the programme of studies and on a regular basis? These and other issues related to web 2.0 services in the learner environment are discussed elsewhere (Edinburgh University, 2007), but it is possible that they may compromise the integrity of a programme and the learner experience. Using Web 2.0 would also have significant resource implications. Tutors and external examiners would be required to log into all the different preferred systems and then familiarise themselves with the various formats and styles before assessing the work.

In the future, a learner will have access to numerous ePortfolio systems - educational, professional, regional and even national, such as the EELs project (JISC, 2008). Higher education will need an approach that accommodates learner choice but one that is also sustainable without significant resourcing implications. It is possible that institutions will elect to have an ePortfolio system where students will have access to templates, exemplars, support and guidance, such as the model developed for radiography students (see Figure 5) outlining the structure of an assessed webfolio. The ePortfolio will also serve as a gateway from which learners will be able to link to a system of their choice. Physiotherapy learners may select to use the CSP ePortfolio whilst our drama learners may wish to link to private entries posted to Facebook. Alternatively some learners may prefer to use the institutional ePortfolio which is structured and supported. For assessments, work held on Web 2.0 services will then need to be 'copied' to the institutional ePortfolio system from the learner's system. Technical solutions to this are currently being explored by CETIS including Portfolio interoperability prototyping (CETIS, 2008).

IMPLEMENTING AN EPORTFOLIO TO ENCOURAGE LEARNER REFLECTION AND SUPPORT PERSONALISED LEARNING

Through our case studies, specific areas have emerged that educators should address when implementing an ePortfolio system to support personalised learning and the personalisation agenda including the following:

Learner Introduction to Reflection

A thorough introduction to reflection should be provided to all learners, explaining the purpose of reflection in learning and its role in future personal development. Examples of reflective writing, both good and bad, as well as frameworks for structuring and supporting reflective accounts help students to start writing reflectively. Learners must know the difference between descriptive and reflective writing; sharing early attempts at reflective writing with 'blogging buddies' who, at a later stage of their studies, could provide valuable, timely feedback.

Assessment Design

Diverse assessment mechanisms, such as learning journals and the creation and maintenance of personal development plans, should be used to engage learners with reflection and the ePortfolio system on a regular basis. Formative and/or summative assessment will provide the best results, encouraging learners to reflect and use the ePortfolio as a support mechanism for the reflective process.

Feedback

Formative and summative feedback is essential especially in the early stages of ePortfolio use. Learners should be encouraged to engage actively with such feedback by commenting within the ePortfolio system on the feedback that they have received and by providing outlines of future activities in response to this feedback. Face-to-face sessions with learners should specifically refer to the feedback within the ePortfolio system and reinforce key messages.

Familiarity with the ePortfolio System

The system can become a barrier for learners, causing them to focus on the tool rather than the learning activity. Learners require at least one hands-on demonstration of the ePortfolio system and then regular 'top-up' opportunities. Easy-to-use documentation and video guides to using the tools within the system are essential, as well as drop-in sessions.

Exemplars and Models of Learner Use of the ePortfolio System

It takes time to visualise an online portfolio and how the different elements may, or may not, be integrated to support learning. Students need to be able to make informed decisions about which tools to use within the system, and when, for example, recognising when a blog would be a useful addition to a webfolio. Exemplars from previous student work help learners develop an understanding of what the system can do for them and why. A model, outlining how the different tools could be integrated, is also helpful in this process.

CONCLUSION

In this chapter we have demonstrated how reflection, when integrated with an ePortfolio, can meet the multiple goals of the personalisation agenda as appropriate for our particular case studies in higher education. We have also shown how technology can be used to help meet that agenda but it is important to recognise that technology, and especially the choice of system used by the learner, is not the complete picture regarding personalisation; it is all too easy to fall into the trap of focussing on system selection rather than addressing the bigger, more complex issues of personalisation, such as strategies to learning and teaching and approaches to assessment and feedback (Pollard & James, 2004). Crucially, through our examples, we have shown that significant planning and careful integration within the curriculum are required to ensure that the ePortfolio supports the personalisation process. ePortfolios must become *part* of the learning process where a student's learning

is documented and tracked, re-visited, revised, expanded and where collaborative activities and discussion are linked directly into the personal portfolio building experience. At the moment, as educators in higher education, we are still in the formative stages of personalisation (Pollard & James, 2004) and further research is required to explore how personalisation develops in higher education. Nevertheless it is clear that:

There is evidence that students [in HE] value personalisation of their learning experience and that the benefits manifest in engagement with their studies, motivation and self-confidence. Empowering students to be autonomous and independent learners also has beneficial consequences in terms of giving them control over important aspects of their own learning. (Knox & Wyper, 2008, p5)

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