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Developing an e-portfolio based pedagogy for work-based learners

A project submitted to Middlesex
University in partial fulfilment of the
requirements for a Doctor of
Professional Studies

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Abstract

In this thesis I explore the use of an e-portfolio as the framework for a pedagogy for work-based learners, in particular for those employed in small to medium sized enterprises; a group of potential learners that are recognised as having potential difficulties in accessing higher education. I analyse the reasons for targeting this group of learners, with particular reference to the economic need to increase the higher level learning of people in the workplace and the potential impact this could have in the local, and wider, economy.

Central to the pedagogic development is the use of e-portfolios. I will interrogate why this technology and methodology was chosen and how the personal learning space it provides is well-suited to supporting and engaging learners in the target group.

The means by which I explore the use of an e-portfolio based pedagogy is through participative action research. This method allows for my explorations to be situated in live settings and to involve participants from the key stakeholder groups. Unlike experimental design, action research aims to generate understandings rather than prove causal relationships. I will explain the cycles of action research employed in my project and evaluate how this impacted on the successful development of the pedagogy.

Findings from my research strongly suggest the benefits of an inclusive approach to pedagogic development which centres on involvement of key stakeholders for the creation of an holistic model. This model incorporates a speedy, flexible and quality assured curriculum that is accessible to the target learners and that can be adapted to a range of existing and perceived needs. At the heart of this model is the use of e-portfolio which provides the learning and personal development space through which the work-based learners' needs can be met and through which dialogue between the learner, employer and academic tutor can be facilitated.

The key innovation in my research findings is the theorisation of different types of scaffolding for e-learning developments and the positing of a taxonomy of scaffolding approaches to learning and teaching design that is founded within the concept of the holistic scaffolding model.

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Most of all I want to acknowledge the role that my daughter Lilly has played; her patience and understanding are exceptional for one so young. She has shared in my joys and exasperations on this latest stage in my learning journey and never moans or complains. Even so, I know she will be elated to have me properly back in her life, as I will be to have time to spend with her.

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Chapter 1 Introduction

1 Introduction

In this chapter I outline my research project and set the context of the work within my doctoral studies and my role at the University of Wolverhampton. In the final section I specify my project aim, objectives, outputs and an overview of my methodology.

2 An e-portfolio based pedagogy for work-based learners

My research project is focused on a two-year long project for which I was Project Director / Manager and in which we developed an e-portfolio based pedagogy for work-based learners. The project was funded by the Joint Information Systems Committee (JISC) as part of their Lifelong Learning and Workforce Development Programme and was focused primarily on developing a pedagogy that could meet identified needs of work-based learners within small to medium sized enterprises (SMEs).

The University had identified a need to develop new income streams to meet the changing funding environment and to continue to support the local economy by developing opportunities to upskill the local workforce. It has embedded e-portfolio use for personal development planning and as a learning environment across a wide range of courses at undergraduate and postgraduate levels and for accredited and non-accredited learning. e-Portfolios are also used to support students on work placements and in clinical practice and to enable learners to construct an evidence-based record of learning as part of formative and summative assessments.

Our experiences with e-portfolios across a range of educational uses suggested to us that they could provide a suitable learning environment for work-based learners to access and engage with higher education (HE) learning opportunities as well as be a platform through which they could combine and evidence a wide range of their learning experiences. We surmised that the e-portfolio software could provide an on-line distance learning environment through which tutors could engage with and support learners in the workplace.

I was also involved in a collaborative project with six regional universities that was involved in the development of foundation degrees for work-based learners built around courses that combined a range of 5-credit units to create courses based on 15 and 20-credit module frameworks. I saw the potential to transfer this model (of 5-credit units) into one where learners could negotiate their preferred combination of units to create individual programmes of study to meet their personal and professional development needs.

The project also tied in with another University initiative that was in its infancy: an innovative approach to determining business performance needs and the design of learning to meet the identified needs, also in smaller units of learning to make it more accessible to the target learners and their employers.

My project was thus intended to bring together the potential provided by the e-portfolio to meet the needs of work-based learners and that of the University to expand its curricula for learners in small to medium sized enterprises who would not otherwise access HE.

My thesis presents my research to develop an e-portfolio based pedagogy for work-based learners which is the final component of my doctoral studies. In the following sections I provide a brief overview of the context of the project within my doctoral programme and explain why my role at the University is well-placed to conduct this research project.

3 Context of this project within my doctoral studies

I have worked in UK higher education since 1993, initially as a lecturer in Construction Management before extending my role into course management and curricula design. More recently I have moved into a central university department, the Institute for Learning Enhancement, and to my role as Co-ordinator of Work-based Learning.

In my earlier studies on this doctoral programme I evidenced and reflected on my learning journey through my career in the Construction Industry, as a lecturer and course developer and into my role in educational development. I presented my studies on a Post Graduate Certificate in Learning and Teaching in Higher Education (PGCert in LandT in HE), and my related work into the use of technologies to support learning, as evidence of competence in the area of professional learning and my MSc dissertation into Craft Skills Training in the

Construction Industry as evidence of my research and development project capability. My claim for advanced developments in professional practice was evidenced through my design, development and management of a BSc (Hons) in Construction Management, delivered in Hong Kong.

The focus of my doctoral research project thus continues my earlier work and experiences of work-based and work-related study and curricula design. It also builds on my widespread practice in the use of technologies to support learning which were extended more recently, as part of my lecturing role on the PGCert in LandT in HE, into the introduction of e-portfolio based assessment to evidence participants' practice as lecturers in HE.

4 My role at the University of Wolverhampton

My role at the University (when undertaking this project) was Co-ordinator of Work-based Learning, situated within the University's Institute for Learning Enhancement (ILE) which is tasked with strategic and operational roles to:

“build an international reputation, ..., for innovative curriculum and teaching; for supporting students from diverse backgrounds; for related pedagogical research; and for the dissemination of good practice. It is committed to its position at the forefront of the development and use of technology to enrich and support the student learning experience, and to the continuing development of staff and students in its use”.

(UoW, 2009a)

My role, as the post title suggests, leads on the work-based learning (WBL) aspects of the strategy. The primary aims of my post are in supporting academic teams in their design and implementation of work-based learning programmes and taking a leading role in strategic initiatives around work-related learning. My previous development and management of work-based and work-integrated learning includes a cross-university collaborative venture to design a foundation degree in leadership and management for work-based learners in a range of economy-critical business sectors (Felce, 2011a).

My job remit, my curricula design experience and my strategic role mean that I am appropriately qualified and situated to lead this important strategic initiative to develop a pedagogy designed to meet identified needs of work-based learners in organisations that are key to the local economy.

Having briefly explained the concept and context for the project, how it fits into my doctoral studies and why I am suited to conduct the research I now outline my role in the project and then the aim, objectives, outputs and methodology that I adopt in my research.

5 My role in the ePPSME project

The JISC-funded ePPSME project ran for two years from March 2009 to March 2011. I undertook the joint role of Project Director and Project Manager and led the project management team throughout the two year period. I sat on the Steering Group and chaired the Project Team as well as invited participants to join the project. I organised and ran the retreats and workshops and conducted the research for and wrote all the reports required by JISC (Baseline Report, Project Plan and Work Packages, Interim and Progress Reports, Final Report and Completion Report). I managed the project budget and liaised with University Schools and support departments and external organisations to co-ordinate activities and ensure project objectives and deliverables were achieved.

I led the pedagogic developments through the action research cycles and co-created all the project outputs in partnership with the project's e-portfolio advisor. I wrote / co-wrote all the conference papers / presentations and was lead writer on journal publications. I designed the format for the project website and supervised its construction by one of my colleagues who is responsible for web development for our team.

6 Project aim, objectives, outputs and methodology

6.1 Project aim

The aim of my project is to develop an employer-responsive, e-portfolio based pedagogy that will support the needs of work-based learners in small to medium sized enterprises.

My pedagogic model will be contextualised to meet the needs and expectations of the students who will engage with it. The University will be provided with a model that can be adopted for the purposes of design and validation of new awards; the University schools will have access to a proven model that can be adapted to a specific context; students will have a clear, identified structure for their programmes; the Institute for Learning Enhancement will have developed

additional expertise within the wider field of work-based learning to inform future strategic development and to support staff and business development in the schools.

6.2 Project objectives

I have identified the following objectives that will help me achieve the project's aim:

1. Establish existing practice and relevant personnel and practice

An audit will be undertaken to determine current practice in the use of e-portfolios at the UoW with particular reference to how it is used with work-based learners. The audit will also be used to identify UoW personnel who are working in this area and who could participate in the project.

2. Undertake a detailed search and review of relevant literature and existing practices

The proposed pedagogic design will need to be informed by a range of current theories and practices covering, inter alia, pedagogic design, on-line learning, work-based learning, e-portfolios, action research methods and evaluation.

3. Use an action research methodology to design an e-portfolio based pedagogy

The project will use a participative action research approach supported by a series of design retreats to involve the key stakeholders in the development of the pedagogy. The action research approach will allow principles and processes to be planned, implemented, evaluated and improved to refine the pedagogy that is proposed as an output from the project.

4. Design and/or test procedures to design, validate and quality assure learning that meets the specific needs of work-based learners in SMEs

The pedagogy that the project aims to develop must be responsive to, and meet the needs of, employers and learners in SMEs; it must also be quality assured through the University academic standards and quality processes and procedures. Where possible we will work within the existing frameworks but where these are identified as not being suitable for this new purpose they will be redesigned through the action research approach and with the full involvement of University personnel in all relevant departments. The approach to determining employer and learner needs is a new initiative for

the University, and although this activity is outside the scope of the project, the data it provides is essential to the learning content that is delivered through the proposed pedagogy, that is developed and the evaluation of whether or not the identified needs have been met.

5. Involve the University, the learners and the employers in the design and evaluation of the pedagogy

The pedagogy is intended to be employer-responsive and to support the needs of work-based learners. The participative action research approach proposed should ensure that all stakeholder voices can be heard and considered.

6. Establish key pedagogic principles for an e-portfolio based pedagogy

The project activities, outputs and evaluation will be analysed “*to extrapolate the pedagogic lessons and hence identify some principles for the e-portfolio based pedagogy for SMEs*” (Felce and Purnell, 2011). The proposed principles will be shared with an appropriate community to assess their validity.

7. Develop information, advice and guidance materials

This project is an important initiative for the University. In order that it can be rolled-out across the eight Academic Schools and that the model can be offered widely across the target learners it needs to be scalable, sustainable and cost-effective. ILE is a small unit within the University and, in order to support the potential large numbers of tutors, learners and support staff developing and engaging with learning through the pedagogy, I will develop relevant on-line information, advice and guidance as part of my role as University Co-ordinator of Work-based Learning.

8. Disseminate findings

The project processes, emerging results and final outputs will be disseminated within the University and to a range of external communities involved in employer engagement and work-based learning and to e-portfolio users.

6.3 Primary project output

The primary project output will be an e-portfolio based pedagogy for work-based learners in SMEs and will be evidenced through the ePPSME Final Project Report (Appendix 1) submitted to JISC as part of our commitment for receiving the

funding to carry out the project. The Final Project Report forms an essential element of this thesis and should be read between reading Chapters 6 and 7, Research Findings and Discussion of Findings, respectively.

The report is presented in a standard JISC template covering all aspects of the work undertaken including methodology, project activity, outputs and dissemination, resources created, impact and benefits, lessons learnt and implications for the future.

6.4 Secondary output

The secondary project output will be a website hosted by the University of Wolverhampton for a minimum period of three years to house the artefacts that are created during the project including resources created, conference papers, journal articles and interim reports submitted to JISC as part of the funding requirements (Appendix 2). Readers will benefit from accessing the website resources (<http://www.wlv.ac.uk/eppsme>) alongside the Final Project Report (Appendix 1).

6.5 Methodology

A participative action research methodology will be adopted, supported by a series of design retreats and pilot units to develop a pedagogy for the target learners. All key stakeholders, employers, learners and relevant university staff (from academic disciplines and support departments) will be engaged in the project. Feedback and evaluation of the project outputs, with all participants, will be through semi-structured interviews at key points in the project. The pedagogic principles that emerge will be evaluated using a “report-and-respond enquiry”.

7 Conclusion

In this chapter I have introduced the background to the concept of the e-portfolio based pedagogy for work-based learners. I have set this research project in the context of my doctoral studies and my role at the University and why I am leading this project have been explained. I have identified the work for which I was responsible and in the final section I have stated my project aim and outputs and I have briefly outlined my proposed research methodology. In the next chapter I expand on the brief project overview I gave at the start of this

chapter to set the background and context for the research and why it is of particular importance to the University of Wolverhampton.



Chapter 2 Background and Context

1 Introduction

My previous experiences, first in the Construction Industry and now in academia, have led me to the understanding that the context in which my work is conducted impacts on the results I am able to achieve. The context will provide the drivers for activity as well as set constraints and restraints on what can be achieved. My work and the research project that forms the basis of my doctoral studies is influenced by a range of factors that provide both the opportunity to carry out the project as well as limitations on how that project can be conducted. In this chapter I outline the context for the project within the University of Wolverhampton (UoW) and within the wider educational and political agendas and I introduce my concept of a 'context-engaged approach' to curricula development and pedagogic design. I look at factors in the micro-environment within the University and the region but I start with a view of the macro-environment and how this has influenced the need for the project to develop an e-portfolio-based pedagogy for work-based learners.

2 The need for the project

2.1 The context of the wider UK Economy and funding of Higher Education

At the time the project proposal was written the UK Government agenda for HE was changing and to meet the recommendations of the Leitch Report (Leitch, 2006), i.e. 40% of adults to achieve Level 4 (and above) qualifications by 2020 (Leitch, 2006, p3), the HE sector needed to look to engage with employees already in the workplace, rather than through traditional school/college graduates. Higher Education Institutions (HEIs) started to look at accreditation of Continuing Professional Development (CPD) activities offered in the workplace and also the provision of opportunities for existing employees to engage with HE studies through work-based learning (WBL) programmes. In addition, the University needed to look to replace the expected decrease in Higher Education Funding Council for England (HEFCE) funded students due to the impact of changes to funding for equivalent or lower level qualifications (ELQ), (HEFCE, 2008). The University estimated that there will be a consequential reduction of 6.5% income from HEFCE which equates to approximately £2.8 million (Gipps, 2008).

During the life of this project there have been additional changes to the HE landscape in England, most notably through reductions in funding (HM Treasury, 2010), and future changes to full-time and part-time student fees (Browne, 2010; Department for Business, Innovation and Skills, BIS, 2011). Whilst the fees proposals are yet to be ratified it is clear that there is a greater need to develop HE learning opportunities for work-based learners than was originally envisaged and the development of a suitable pedagogy to meet the needs of these learners that fits the context of the learners, the economy and the University.

The programme for government issued by the new coalition in May 2010 recognised the essential nature of universities in “*building a strong and innovative economy*” (The Coalition, 2010, p31) and the need for higher education providers to work more closely with employers and employer organisations is a high priority in the white paper: Higher Education: Students at the heart of the system (BIS, 2011). Within the White Paper the government states that they want lifelong learning opportunities to be made available and more diverse models of accessing that learning to be provided, for instance through innovative modes of study and through a more diverse range of providers including further education and private bodies. One way in which they seek to open education to wider participation is by making student loans (to pay university fees) accessible to part-time and distance learning students; although students must be studying at least 25% of a full-time programme to do so (this would be equivalent to 30 credits of study per annum). Employers will also be encouraged to sponsor students through higher education and where these studies are paid for entirely by the employer (i.e. there is no funding from the public purse) then there will be no cap on student numbers. These proposals offer mixed blessings: there will be more competition for work-based learners because there will be more institutions able to offer accredited learning and the cost of higher education is increasing (up to three times its current fee). However, universities are being encouraged to offer more innovative models of delivery and not be restricted by a cap on recruitment (provided the students do not access government funding).

The need for alternative routes to and through HE has been promoted by both the previous Labour government and the current Coalition. Peter Mandelson, in a speech to the HE sector, highlighted the need for flexible alternatives to traditional HE programmes to meet the changing needs of mature and part-time

students including modular programmes that do not have to lead to a full degree (Mandelson, 2009). Research into employer engagement projects by the HEA Engineering Subject Centre (Arlett and Dales, 2008) also found that *“supporting more flexible modes of delivery, including learning in the workplace, ... is a necessity”*. Seagraves, Osborne and Kemp (1996) had earlier recommended that in order to respond to the need to recognise that learning can be achieved in the workplace as well as in an institution, HE needs to adapt to different delivery structures.

Earlier recommendations had been made in the Helsinki Communiqué, in 2006, which *“highlighted a need to improve the performance and attractiveness of vocational education and training”* (Gibbs and Armsby, 2010) and in a commentary for The Guardian newspaper in 2009, David Blunkett MP, explained how BIS needed to make adult learning a top priority and to trust people to make their own decisions about what they need to learn. Blunkett presented some of the benefits of adult learning to individuals and the wider society and economy as: prolonging working life, allowing firms and individuals to reposition themselves after the recession, children of parents who return to study are likely to do better, offenders are less likely to reoffend, learning can also assist recovery from mental illness, impact on racial tolerance and adult learners are more likely to give up smoking and be active volunteers. He also stated that *“businesses that fail to develop their staff are twice as likely to collapse”* (Blunkett and Tuckett, 2009). In support of this argument, Riddell, Ahlgren and Weedon (2009, p784) state that *“human capital theory suggests that states with high levels of investment in education and lifelong learning, and a generally well-educated population, should enjoy greater wealth and prosperity”*.

Professor Craig Mahoney, Chief Executive of the Higher Education Academy also recognised the importance of HE for both the individual, the society and the economy saying:

“Higher education should be a transformative process that supports the development of graduates who can make a meaningful contribution to wider society, local communities and to the economy.”

(Gibbs, 2010, p2)

Mahoney’s comment can be applied equally to all those who undertake higher level studies, not just be restricted to those who ‘graduate’ in the traditional sense, i.e. those with a degree.

Higher Ambitions (BIS, 2009a) recognised the need to increase engagement with higher education from all those who can benefit from it stating that “*too many people with the ability to benefit from higher education are still not entering the system*” (BIS, 2009a, p7) and proposing that more adults be given the opportunity to access HE through the development of a broader range of models of learning such as work-based study and part-time study. A sister report, *Skills for growth* (BIS, 2009b) stated that it wanted clearer linkages between higher level learning and the workplace reporting that:

“a one percentage point increase in the proportion of employees trained is associated with an increase in productivity of 0.6 percentage points - which in turn is worth around £6 billion a year to the UK economy”

(BIS, 2009b, p4)

In the future, the demand for HE level work-based learning has the potential to increase due to the numbers of workers having vocational qualifications that they could choose to extend into HE level learning. Between 2007 and 2008 there was an 11% increase in the numbers of learners taking vocational qualifications (BBC News, 23rd June 2009a). The proposed increase in the numbers of apprenticeships under the coalition government should also add to this potential increase. However, a report by Oxford University's education department noted that students with vocational qualifications were less likely to get a university place and were more likely to leave within their first year of study (Lipsett, in *The Guardian*, 28th July 2009). As the students in this study were undertaking traditional on-campus courses and the main reasons for them leaving were given as family responsibilities and financial problems this adds weight to the argument for an alternative route to HE through work-based learning.

Making HE level learning available to people already in work through an accessible model of work-based learning can also contribute to the widening participation agenda. In July 2009 a report from (BIS) (BBC News, 1st July 2009b) noted that only 1 in 5 first time entrants to universities are from the poorest homes, compared to 40% going to university from the richest homes.

This discussion shows that there is an economic and social need as well as a financial imperative to create new opportunities for learners in work to access higher education. Having looked at the wider economy and issues of funding I

will now show how there is a local need and a market to develop a new pedagogic model for work-based learners in small to medium sized enterprises.

2.2 Small to medium sized enterprises in the West Midlands

The West Midlands, where the University of Wolverhampton (UoW) is based, is recognised as having poor achievement in terms of workforce qualifications and productivity (AWM, 2007, AWM and LSC, 2008, UKCES, 2009a and 2009b). The Advantage West Midlands (AWM) 2007 economic strategy identified an output gap of approximately £10 billion between the West Midlands and the UK average stating:

“The West Midlands performs poorly on levels of qualifications in the workforce, graduate retention, leadership and management, and work-based training, and ranks in the bottom quartile of regions on most skills indicators.”

(AWM, 2007, p7).

The 2008 regional Skills Action Plan (AWM and LSC, 2008) showed that there were 70,000 fewer people in the West Midlands with a graduate qualification when compared with the average for England. The Plan argued that this shortfall results in lower competitiveness for the local economy both nationally and internationally.

The majority of private sector employers in the West Midlands is small to medium sized enterprises (SMEs) i.e. less than 250 employees. These SMEs employ about 73% of the region’s private sector workforce (CFE, 2009, p16). Manufacturing, which has historically been an important business sector for the region, is made up of over 98% SMEs (AWM, 2008, p5).

Key issues for SMEs when accessing learning can be summarised as: minimal time away from workplace, responsiveness of provider, flexibility of delivery methods and immediate relevance to the business’ challenges, of practical relevance to the workplace and cost is not the highest priority for the employer (Pickford, 2009, p28). However, training opportunities provided by government and other related bodies have been criticised by SMEs as not being relevant to their needs (Billett, 2010, p404) and businesses will not invest in workplace learning if it does not motivate their *“employees in ways which support business objectives”* (Roodhouse, 2009). Carter (2009) recommended there is a need for flexible start times for courses, opportunities to study smaller units of learning and investing more to support on-line and distance learning.

Within the local region, therefore, there is a need to improve qualifications at HE levels and a significant market of potential learners within the region's small to medium sized enterprises. A pedagogic model developed for these learners should consider the identified needs of this particular group of work-based learners. The potential for the University of Wolverhampton to meet this need is now discussed.

2.3 The University of Wolverhampton

The University of Wolverhampton (UoW) is one of the largest universities in the UK (Felce, 2007a, p12) and is committed to Widening Participation and up-skilling the local community where fewer people enter higher education (HE) than the national average (UoW, 2004). The University's Mission Statement (UoW, 2011) confirms that the University is committed to being:

“an agent for social inclusion and change; an arena for the development of ideas and critical thinking; a strategic force driving educational and cultural strategy for the city and the region, and an educational hub supporting the economy through employment, entrepreneurship, creativity, knowledge transfer, research and development”.

The curricula, learning and teaching and academic quality assurance section of the strategic plan expands the commitment to these areas and states that

“new curriculum and courses will be offered taking advantage of interdisciplinarity... the formal curriculum will be contextualised through work-based learning...”,

in addition, the University plans to

“build an international reputation for innovative curriculum and teaching; for supporting students from diverse backgrounds...”

and is committed to the:

“use of technology to enrich and support the student learning experience”

(UoW, 2006).

In my paper “Towards a Context-engaged Approach to Work-based Learning” (Felce, 2010) I argue that curricula developments in work-based, as in any other learning, must be contextualised to the individual university, taking into account macro- and micro- external and internal factors. The Association for Learning Technology research committee supported my assertions in their research into technology in learning where they found that projects that do not work are

those which “are out of step with the HEI priorities” and those which do not develop “staff to meet new demands” (ALT Research Committee, 2010a).

Within my paper I reported that:

“The University has a strong e-learning capability and has embedded technology-supported learning across the curricula through its blended learning strategy. The expertise that exists within this community, which already engages with learners in the workplace, can be used to inform and support WBL”

(Felce, 2010, p29)

The Blended Learning Strategy includes six entitlements where learners will:

1. have access to a digital copy of all lecturer-produced course documents
2. have formative assessment opportunities on-line with meaningful electronic assessment feedback
3. collaborate on-line with others in their learning cohort
4. participate in electronic personal development planning (ePDP)
5. submit all (appropriate) assessments on-line
6. engage in interactive learning during all face-to-face sessions.

(UoW, 2008; 2009)

These entitlements apply to all curricula at the University and therefore are part of the context in which pedagogic design for work-based learners is set.

The University has a commitment to vocationally relevant qualifications and whilst there is a significant range of opportunities for work-related learning and work placements there is no bespoke provision for learners in work to achieve HE level qualifications if they are unable to commit themselves to a part-time course, which can take up to six years to complete. My project therefore needs to design a pedagogy that will be accessible to learners in the workplace, will start to fill the identified skills gap and will be in step with the UoW priorities. One pedagogic model for work-based learners that I co-developed and other concurrent activities at the UoW, relevant to the thinking behind my new pedagogy, are now explained.

2.4 Work-based learning models

Since early 2008 I have been involved in a cross-university collaboration to develop foundation degrees in Leadership and Management. The initiative,

Business Operations ~ Business Leadership (BO~BL) was led by Foundation Degree Forward (FDF) and received project funding from Advantage West Midlands in 2009. Key to the BO~BL development was the opportunity to design a common core of modules for all learners that run alongside subject specialisms in identified business areas, the first four of which were Construction, Financial Services, Manufacturing and Supply Chain Management with the intention to create up to 24 subject specialisms.

In order to cater for the different modular structures at the universities and colleges involved in the collaborative partnership I proposed a framework that built upon 5-credit units that could be combined into either 15 or 20-credit modular courses. Although my proposal was initially considered quite radical, once I had explained the benefits of this approach, the other curricula designers agreed to it. A framework of 5-credit units at HE levels 4 and 5 was designed so that the units could be combined into different module frameworks and studied, either as individual modules or as Certificates in HE or as Foundation Degrees. Each member of the partnership became responsible for developing the learning materials for a number of core 5-credit units that could then be accessed and used by the other members of the group as part of their own foundation degrees. I wrote up my experiences on this partnership in my paper: “Cross university collaboration for work-place learning: a case study” (Felce, 2011a).

Part-way through the FDF project the credit crunch hit and the original market identified for the courses was decimated so, to date, the original planned courses have not been fully designed or validated. However, the learning from the initiative and the potential of using 5-credit units as part of larger programmes of study was fundamental to the thinking behind my idea of an e-portfolio based pedagogy.

In 2009 the University bid for, and was awarded, Higher Education Innovation Funding (HEIF4), the majority of which was used to set up a wholly-owned subsidiary company that was to act as a broker between the University and the local business community to undertake market research to identify and develop business opportunities for continuing personal and professional development (CPPD). A confidential internal university audit of CPPD activity in 2007 found that up to 40% of staff were engaged in CPPD-type activity and that “costs related to contact days with the community were assessed at £5.5 million” (UoW, 2007, cited in Felce and Purnell, 2012). The initial business plan for the

new company proposed that learning opportunities be based on 40 hours of notional learner effort, which would equate to 4 credits of HE level study. In order to ensure cross-curricular consistency and interoperability I proposed that a basic unit of 5-credits (equivalent to 50 hours of notional learner effort) be adopted in the business plan as this would fit with the university's 20-credit modular framework and the concurrent BO-BL developments. My proposal for 5-credit units was accepted and the business plan was modified to reflect this change.

One consideration in work-based learning curricula design is the need to negotiate or personalise the learning journey so that it meets the specific needs of each learner. However, curricula designers must also be cognisant of the need to design curricula that are cost-effective and cost-efficient: individually negotiated learning can be an expensive alternative to the economies of scale achieved through mass higher education. Through the BO-BL project I proposed curricula that could be constructed of small bite-sized units (equivalent to 5-credits) combined into 15 or 20-credit modules to create common foundation degrees. I also realised that learners could combine a range of 5-credit units to create their own bespoke and personalised qualification, depending on which combination of units they chose. Learners could thus negotiate an individual course of study and the University could offer a range of bite-sized units from which learners could choose, thus achieving a more cost effective solution that would still meet work-based learner needs. Nixon (2008, p7), in his work-based learning impact study noted that "*bite-size chunks are a catalyst for further study*".

I have sometimes referred to this negotiated bite-sized chunks approach as a 'Dolly Mixture approach' where all the units are available and learners select the ones that best suit their learning needs. An alternative name might be a 'Quality Street approach' to denote that maintaining quality is, as always, a key imperative.

In this section I have explained the context and need for my project to develop a new pedagogy for work-based learners in small to medium sized enterprises. I have looked at the macro and micro economic factors, I have shown how new income streams need to be sourced and I have outlined the relevance of

designing a pedagogy within an appropriate technology. I have also introduced the concept of negotiating courses to meet individual needs around combinations of 5-credit units of study. In the following section I will explain why an e-portfolio based pedagogy is appropriate.

3 An e-portfolio based pedagogy

The idea of an e-portfolio based pedagogy emerged as a result of previous use of and research into e-portfolios and the recognition of the value of the e-portfolio as a tool for scaffolding learning and enabling students to reflect on the range of events in their learning journeys. From these previous experiences, combined with the work I had undertaken in developing foundation degrees based on the notion of a 5-credit unit structure, the idea to develop a pedagogic model that used an e-portfolio to allow work-based learners to negotiate learning programmes emerged. The use of a range of 5-credit units, developed in response to market research with small to medium sized enterprises would allow learners to negotiate a bespoke award to meet their personal learning needs. The use of an e-portfolio provided the opportunity to offer a distance learning model that would make the learning more accessible to work-based learners as well as a learning environment in which they could record and reflect on their learning, share their experiences with others and through which they could be assessed. The e-portfolio could provide the environment to record, reflect on and repurpose the wide range of a learner's experiences and learning. Experiences from within and outside a curriculum could be captured and the e-portfolio could also provide scaffolding to support the learner and the learning. (Figure 2.1 shows the concept of the e-portfolio based pedagogy).

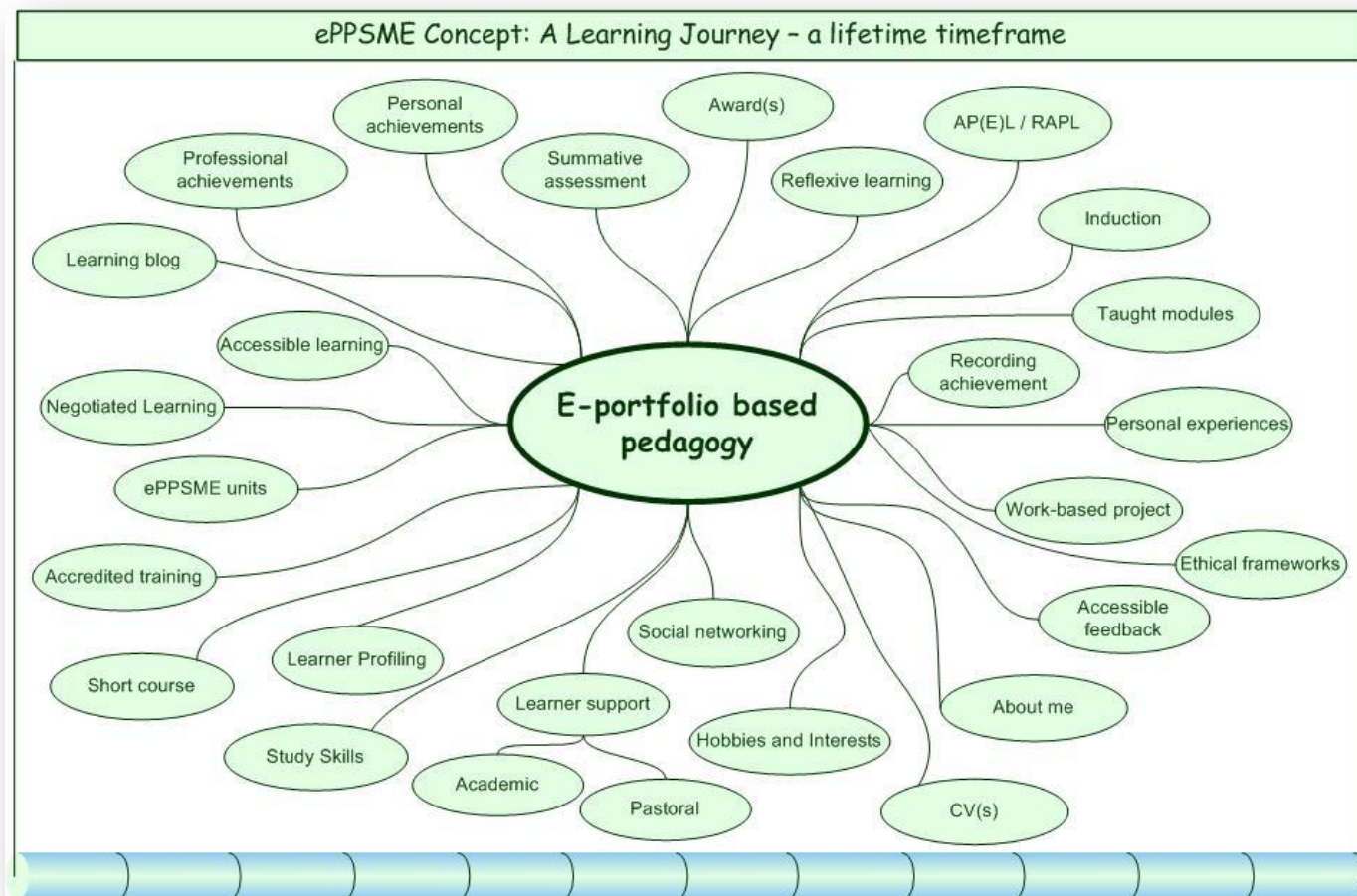


Figure 2.1 e-portfolio based pedagogy concept map

Since their first use at UoW in 2005 e-portfolios have been widely used across the curricula to support learners in a variety of contexts for example: transition into university, developing reflective practice, and learners on work placements. The UoW uses e-portfolios to support learning, teaching and assessment in a range of contexts. In 2010 it received a prestigious platinum award from Instructional Management Systems (IMS) Learning Impact Awards in recognition of this (UoW, 2010).

The e-portfolio software used at the University (PebblePad) contains a variety of templates and tools that can be used by tutors to support and structure student learning and by students, for the same purposes. Figure 2.2 shows the range of inputs and output options within PebblePad.

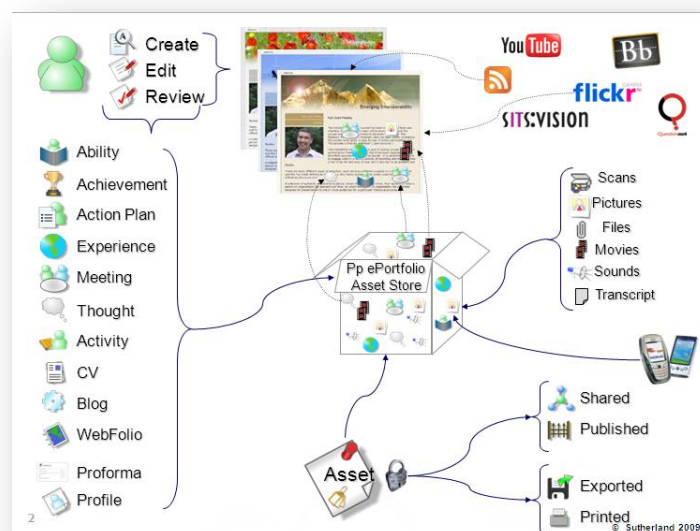


Figure 2.2 PebblePad: potential inputs and outputs (Source: Sutherland, 2009)

[Permission to reproduce this image has been granted by S.Sutherland]

It is not appropriate to examine the whole range of these within this chapter but three are of particular relevance to my project: gateways, webfolios and blogs. First I will briefly explain the notion of the e-portfolio being a personal learning space and then I will provide an overview of gateways and then the webfolio and blog tools as two potential learning environments.

3.1 e-portfolio as personal learning space

An individual with an IT account at the UoW has access to a personal repository within PebblePad (the asset store). This store can be populated, by the

individual, with a range of different assets, as indicated in Figure 2.2, including records of achievement or experiences, movies, pictures, thoughts and personal profiles. Assets can be created from within the software or saved into from a range of devices including mobile phones, cameras and scanners. Any asset that is created within, or saved to, the asset store cannot be seen by anyone else, unless the individual chooses to share it. When an asset is shared this can be with an individual, with a group or with a wider audience through, for instance, social media sites. The individual maintains control of the assets at all times and can choose to stop sharing at any point.

3.2 Gateways

For formative and summative assessment purposes a function called the 'gateway' is available. This is, in simple terms, a space on the server into which individuals share their work with a tutor and maybe with their peers. Assets that are shared in a gateway (published) allow tutors, and others, to easily view, as well as comment on, a number of assets and to see changes made to that asset by each individual owner. Assets can only be viewed by the owner and those with appropriate 'permissions' to view them in the gateway. Individuals can stop their asset being seen in the gateway at any time, but this would not be appropriate where the asset is part of formative or summative assessment. Tutors can archive any asset within the gateway for record purposes and for quality assurance requirements but this would normally only be required with summatively assessed assets.

3.3 Webfolios

A webfolio is a tool, within PebblePad, through which a learner can provide access to the myriad records (or assets) that have been created or uploaded into the e-portfolio. The original intention in its design was for it to be:

"a purposeful aggregation of digital items - ideas, evidence, reflections, feedback, data etc - which 'present' a selected audience with information about the subject of that e-portfolio."

(Pebble Learning, 2011a)

In appearance webfolios look like webpages and they have been used for a variety of purposes beyond their initial design intentions, for instance, as templates for assessed coursework and to act as a virtual learning environment with learning content, support and guidance and hyperlinks to relevant

resources. Figure 2.3 shows potential construction and content structure for a webfolio.

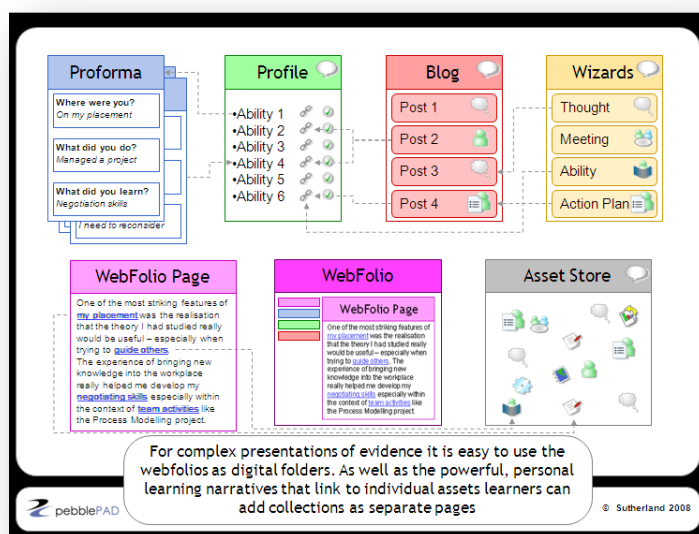


Figure 2.3 PebblePad: potential webfolio structures (Source: Sutherland, 2008)

[Permission to reproduce this image has been granted by S.Sutherland]

3.4 Blogs

The term blog is derived from the term web log which is used to denote a log that is posted on the internet, or web. Within the context of PebblePad blogs are: "single page websites that list entries made to them in date order" (Pebble Learning, 2011b). Blog authors can choose whether or not to keep their blogs private or to share them with others. Each time a PebblePad user makes an entry into their blog (a post) a new asset is created in their asset store thus providing a unique record for each post which can later be presented as evidence of a learning, or other, experience.

The blog function within PebblePad can also be used to create a collaborative learning opportunity through a 'group blog' in which multiple users have access to add posts, or comment on other posts, in a blog.

3.5 Initial design plans

My initial plan for using the e-portfolio was to use the webfolio tool to create a virtual learning environment (VLE) through which learners could view information about their studies and the learning content as well as add their own content and respond to questions and activities set by the tutors. This was

to avoid known difficulties with other learners in using both the VLE and the e-portfolio environments simultaneously.

The unit webfolio could be created as a template that learners would be able to access and copy and then individualise it with their own content and responses. Learners could post their webfolio to a specified gateway to allow access for view and comment by the tutors.

A group blog would be created and access permissions given to all learners, and tutors, in a cohort to share ideas and experiences and to generate collaboration between the learners on each 5-credit unit.

The University's subsidiary company was to be used to undertake market research with the local small to medium sized enterprises to identify performance needs; university tutors would interpret these performance needs and develop 5-credit units that would address the identified need. However, research into improving learning in the workplace noted that whilst approaches to workplace learning take a deficit view (Rainbird, 2004) i.e. they identify a 'gap' that needs to be filled, work-based learning needs to make more of what learners already know and find ways of recognising this knowledge to boost their confidence. Although the 5-credit units are based on meeting performance needs the ability of learners to negotiate their learning through the combinations of units that they study, and the use of an e-portfolio to record past as well as current experiences and learning, should also allow them to make use of their prior knowledge.

We initially planned for each 5-credit unit to be completed over a ten week period, allowing for a notional five hours of study each week. In order for the learners to access collaborative activities we planned to run the units with groups of learners and whilst this would not provide total flexibility in start times we planned to allow the cohorts to be able to start at any point in the calendar year, rather than be restricted to semester-based start times.

The project also needed to consider wider issues around the pedagogy such as learner identities, access to University services, registration and enrolment as well as ensuring the quality of all aspects of the new pedagogy. In its survey into employer-responsive provision (QAA, 2010) the QAA found that institutions need to develop frameworks (for quality assurance) that are flexible enough to meet the needs of individual employers but also cost effective to administer for the

HEI and to develop processes that are appropriate to the level of risk associated with the provision. The report also noted the need for academic and administrative staff to undergo a cultural change to be truly responsive to this type of activity.

The focus of the project is at foundation degree level, i.e. levels 4 and 5 on the Further and Higher Education Qualifications Framework (FHEQ, QAA, 2001). Foundation degrees are intended to combine work-based learning and academic study; they are intended to be co-designed with employers so that they can be customised to an employer's, or business sector's, needs as well as being academically rigorous (FDF, no date.; QAA, 2004). Foundation degrees formed part of the Labour government's skills strategy and were intended to create more flexible and diverse provision at HE level as well as to broaden and widen participation in HE (Callender, 2010).

Whilst foundation degrees have been available for some years they tend to be more widely accessed by larger employers because they have the time and resource to engage with curricula design whereas SMEs do not (Benefer, cited in Harvey, 2009, p28). Students often find it difficult to keep up with the pace of study on foundation degrees and with the academic requirements as a result of a range of factors e.g. time-planning, financial pressures, impact of the course on their families (Harvey, 2009, pp38-39). My approach should address these issues in that we are designing a flexible model that will broaden and widen participation, that will allow SMEs to be involved in the design of the units and that will allow learners to keep up with the pace of study.

3.6 JISC funded project

The basis of my doctoral work, the project to develop an e-portfolio based pedagogy for work-based learners in small to medium sized enterprises (ePPSME), was the result of a bid for funding from JISC (Joint Information Systems Committee) as part of the Lifelong Learning and Workforce Development programme within JISC's e-Learning programme.

Key components of the bid were:

- The need to fit with the university strategic plan and mission and
- To build on existing practice embedded across the institution.

The bid provided an opportunity to develop the concept of negotiating studies for work-based learners around a framework of bite-sized units and to build on the University's recognised expertise in the use of e-portfolios to support a range of modes of study.

The University has been successful in previous ESRC, JISC and Higher Education Academy (HEA) funded projects and proposed to build on the experience from three key projects:

- Learning and Teaching for Social Diversity and Difference (ESRC funded)
- ePistle - which investigated embedding e-portfolios within the curricula (JISC funded)
- Pathfinder Programme- implementing the use of e-portfolio-based personal development planning in Level 4 curricula (HEA funded).

In addition, we proposed building on the experience of using the e-portfolio software tool to deliver a successful foundation degree in travel operations management and for supporting learners on work placements.

4 Conclusion

This chapter has outlined the context in which the project is set and it has identified the strategic needs of both the University and the wider economy. It has shown why the target group are of significant importance and outlined the rationale behind the choice of an e-portfolio based pedagogy. I have introduced my concept of a context-engaged approach to pedagogic development and identified the relevant influences on this project. Having set the context, in the following chapter I will present a critical review of literature relevant to my proposed pedagogy.

Chapter 3 Literature Review

1 Introduction

In Chapter 2, Background, I outlined the importance of the project to the University with reference to key external and internal factors that helped determine the design of the project and the use of an e-portfolio in which to base the new pedagogy. I explained the design concept behind the proposed pedagogy, the approach to its development and how it met the needs for a *context-engaged approach* (Felce, 2010). In this chapter I will review the key literature and other information that have shaped and informed the project and I will revisit my project objectives in the light of this literature review.

In conducting my literature review I have accessed a range of published and grey materials through books, peer reviewed journals, websites and project reports. On the whole my literature search has used contemporaneous sources i.e. predominately those published within the last ten years, with the exception of seminal works outside that timeframe.

My project, to develop an e-portfolio based pedagogy for work-based learners in small to medium sized enterprises, has a number of key issues that I have addressed within the literature review. Firstly, I consider the concept of pedagogy in which I look at the notions of pedagogy and andragogy and how they apply to the learners in my project context. Secondly I identify issues around on-line / e-learning and learning through group work before reviewing literature on concepts of pedagogic design that are relevant to an e-portfolio based approach namely, constructivism, the scaffolding of learning (within and outside the curricula) and the role of reflection in learning. The final section of my literature review targets specific literature that addresses the learning opportunities that the e-portfolio based pedagogy can provide and looks at the learning environment and assessment. In the final section of this chapter I present a review of my project objectives.

2 Pedagogy or Andragogy?

In traditional curricula models the concepts of pedagogic design are applied where the teacher determines what students need to learn and teachers design and lead the learning. Stenhouse (1975, p24) states:

“schools take responsibility for planning and organising children’s learning. They try to give it direction and to maximise its effectiveness.”

Alexander (2004, p11, cited in James and Pollard, 2011, p280) defines pedagogy as:

“the act of teaching together with its attendant discourse. It is what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decisions of which teaching is constituted.”

Whilst Lea (2004, p740) defines it as: *“the science of teaching”*.

Although pedagogy is a term used for all age groups and contexts its origins lie in designing learning for children, rather than adults. Andragogy is a term used for designing learning for adults. Knowles (1984) identified five critical assumptions that differentiated adult learners from child learners:

1. *Self-concept: As a person matures his self-concept moves from one of being a dependent personality toward one of being a self-directed human being.*
2. *Experience: As a person matures he accumulates a growing reservoir of experience that becomes an increasing resource for learning.*
3. *Readiness to learn: As a person matures his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles.*
4. *Orientation to learning: As a person matures his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness to one of problem centeredness.*
5. *Motivation to learn: As a person matures the motivation to learn is internal.*

(Knowles 1984, p12; Knowles and Associates 1984, pp9-12).

Knight (1997, cited in Maisch, 2003, p195) supported the view that adult learning is in some ways different and reported that:

“various studies have described adult learners as responsive, highly motivated and disciplined who appreciate their newly acquired learning and tend to apply critical thinking to their learning more than younger students do.”

In criticising the concept of andragogy Kidd (1978, p17) noted that:

“adult learning is not a different kind or order from child learning..... man must be seen as a whole, in his lifelong development. Principles of learning will apply, to all stages in life.”

This is supported by Smith (1999) who offers a range of criticisms of the concept of an andragogy suggesting that:

“the search for andragogy is pointless. There is no basis in the characteristics of adult learners upon which to construct a comprehensive theory.”

An alternative approach for work-based learners, that of heutagogy, is proposed by Hase and Kenyon (2003, 2001, 2000) and Canning (2010). Heutagogy is defined as the *“study of self-determined learning”* (Hase and Kenyon, 2003) and it is proposed because it:

“recognises the need to be flexible in the learning where the teacher provides resources but the learner designs the actual course he or she might take by negotiating the learning.”

(Hase and Kenyon, 2001, p3)

Simon (1981, p131 cited in James and Pollard, 2011, p276) expressed his concern that pedagogic design in England was *“too concerned with individual differences in learners”* and posited that good pedagogic design needed to look at commonalities to inform general principles and from them *“determine what modifications of practice are necessary to meet specific individual needs”*. Simon’s view is supported by Croussard, Pryor and Torrance (2004, p25) who extol the importance of pedagogy *“in designing a learning environment which can support the widest spectrum of students.”*

Debate into the terminology to be used for designing higher education for work-based learners is likely to continue with some preferring to identify pedagogy as being relevant to the learning of children and andragogy as relevant to adults or, as in the case of Hase, Kenyon and Canning, to identify alternative terminology for their specific contexts. In the context of my project I will be working with learners in post-compulsory education, all of whom will be more than 16 years old, most are likely to be in the 30 to 60 year old age bracket and so all will fall into the category of ‘adult learners’. This would suggest that I should be developing an e-portfolio based andragogy, rather than a pedagogy. Yet, my learners will be work-based learners and I will be looking to enable learners to negotiate their own learning, so should I be developing an e-portfolio based heutagogy? What I am also cognisant of is the culture of ‘education’ with which my learners are likely to be familiar i.e. the one they encountered at school or possibly in further education. Their expectation of learning is likely to be one where the ‘teacher’ takes control of learning design and they will be distance

learners. Is it realistic to expect learners to take full control of their own learning from day 1, or should the learning environment I develop be more supportive in the early learning stages but provide the learners with the abilities to gradually take more control of and for their own learning? One of the ideas behind the use of the e-portfolio means that this developmental process is achievable, so is what I am developing a pedagogic, andragogical heutagogy? But for my research I have not found that these categories are relevant to what I need to achieve. What I am seeking to design is an approach that will be effective for work-based learning in my specific context.

In my research of differences and similarities between the different terminologies, what, for me, is most critical are the views expressed by Simon and by Coussard, Pryor and Torrance i.e. the need to design an inclusive learning environment that can be modified to meet individual needs and that is mindful of, and applies, principles of providing opportunities to learn. My intention to develop 'an e-portfolio based pedagogy' will use this more generic understanding of the term, recognising that "*learning processes, as distinct from learning contexts, do not fundamentally change as children become adults*" (TLRP, no date a, p1).

2.1 What "works" for work-based learning?

Pedagogy, then, as it is used in my research is seen by me as a generic term that applies to the provision of learning opportunities through the design and support of learning, at any age, but that needs to be modified to meet individual needs. In my context these individual needs are those of work-based learners, whose needs will be further individualised depending on each learner's distinct characteristics. In this section I will look at proposed principles for effective pedagogies and how these can be applied in the context of work-based learning.

Longitudinal research by the Teaching and Learning Research Programme (TLRP) identified ten evidence-informed principles for designing effective pedagogies. Although the research was originally focused on schools, James and Pollard (2011, p275) argue that the principles have been grounded in wider literature and that those applying the principles need to judge how best to apply them in their own contexts:

“although contexts for learning vary, the common features in how people learn across the life course makes the validity of a shared set of principles sufficient to be worthy of serious consideration.”

(James and Pollard, 2011, p280)

Variations of the principles for application in HE (David, 2009) and workplace learning (Brown, 2009) have been identified. Table 3.1 presents a summary of these three sets of principles and shows how they apply in the contexts of my research i.e. situated in HE and for work-based learners. The ten principles can be grouped into four categories reflecting the *“multi-layered nature of innovation in pedagogy”* (James and Pollard, 2011, p275):

1. Educational values and purposes (Principle 1)
2. Curricula, pedagogy and assessment (Principles 2-5)
3. Personal and social processes and relationships (Principles 6-8)
4. Teachers and policies (Principles 9-10).

	TLRP's evidence-informed pedagogic principles (TLRP, no date b)	TLRP's evidence-informed principles for learning and teaching in UK higher education (David, 2009)	TLRPs evidence-informed principles for higher skills development at work (Brown, 2009)
1	Effective pedagogy equips learners for life in its broadest sense. (1)	Effective pedagogy equips learners for life in its broadest sense. (10)	Effective higher skills development at work should engage with individuals' broader life goals. (10)
2	Effective pedagogy engages with valued forms of knowledge. (2)	Effective pedagogy engages with expertise and valued forms of knowledge in disciplines and subjects. (9)	Effective higher skills development at work engages with expertise and valued forms of knowledge. (9)
3	Effective pedagogy recognises the importance of prior experience and learning. (3)	Effective pedagogy recognises the importance of prior or concurrent experience and learning. (8)	Effective development at work recognises the importance of prior experience and learning. (8)
4	Effective pedagogy requires learning to be scaffolded. (4)	Effective pedagogy requires learning to be systematically developed. (7)	Effective higher skills development at work requires learning to be systematically developed. (7)
5	Effective pedagogy needs assessment to be congruent with learning. (5)	Effective pedagogy needs assessment to be congruent with learning. (6)	Effective higher skills development at work is dependent upon the timeliness and quality of feedback and support. (6)
6	Effective pedagogy promotes the active engagement of the learner. (6)	Effective pedagogy promotes the active engagement of the student as learner. (5)	Higher skills development at work promotes the active engagement of the individual as a learner. (5)
7	Effective pedagogy fosters both individual and social processes and outcomes. (7)	Effective pedagogy fosters both individual and social processes and outcomes. (4)	Higher skills development at work involves both individual and social processes and outcomes. (4)
8	Effective pedagogy recognises the significance of informal learning. (8)	Effective pedagogy recognises the significance of informal learning to developing specific expertise. (3)	Informal learning is central to higher skills development at work. (3)
9	Effective pedagogy depends on the learning of all those who support the learning of others. (9)	Effective pedagogy depends on the research and learning of all those educators who teach and research to support the learning of others. (2)	Effective higher skills development depends on the learning and development of all those who support the learning of others in the workplace. (2)
10	Effective pedagogy demands consistent policy frameworks with support for learning as their primary focus. (10)	Effective pedagogy demands consistent policy frameworks, with support for learning for diverse students as their main focus. (1)	Skills development policy should have twin foci upon enhancing both individual development and organisational performance. (1)

Table 3.1 Evidence-informed principles for effective pedagogies

(Numbers following principles represent order in which principles are presented in the respective texts; for comparison purposes principles have been re-ordered)

TLRP's principles present a view that effective pedagogy encompasses a wide range of factors from the broader economic and social contexts through to the local and individual contexts of learners, teachers and others such as family and employers and hence an effective pedagogy is "*evaluated by reference to the goals and values of the society it serves*" (James and Pollard, 2011, p276).

TLRP's, David's and Brown's research shows that there is consistency in the pedagogic principles for different contexts but they need to be contextualised to the specific application, hence the emphasis on skills, the workplace and the learner in Brown's view that is not relevant to the other two, more generic, views.

These views align directly with my notion of a context-engaged approach which is what underpins my approach to the e-portfolio based pedagogy that I am developing. It also confirms my experiences in designing and delivering curricula, in teaching and assessment practices and in the support of learners. At a micro level I can apply this to the design of a single learning experience, a taught classroom session. Over my career in education I have delivered the same module over a number of years to a variety of different groups of learners, some full-time, some part-time, international students in the UK, international students overseas. Whilst the aims of the session do not change, the way in which I deliver it will vary on the group, on their prior experience and on their level of engagement with the activities. I need to vary the approach to suit the specific context but the underlying principle of the session's learning outcomes will not change, hence the principle is consistent but the application is context-specific.

The TLRP principles provide a framework that I can use to inform, as well as test, the design of my pedagogy.

A range of other authors argue for work-based learning pedagogies but none of these contradict or diminish the principles expressed in the TLRP research, what they argue for is a context-based approach.

Johnson (2000, in Lee, McGuiggan and Holland, 2010, p561) posits that:

"evidence suggests that traditional teaching pedagogies are too prescriptive, dated and inaccessible to some students and use inappropriate assessment criteria."

The traditional teaching pedagogies referred to by Johnson are those which require regular attendance in face-to-face lectures and assessment by essay or examination and these will be inappropriate for learners who are based in work, for whom it is not appropriate to attend classes and who want to evidence their learning through and in their work.

Lester and Costley (2010, p564) also support the view that “*work-based learning ... pedagogies are needed*” whilst Groves (2009, p46) reports Longhurst’s request (in a speech at a conference on employer engagement) that “*Institutions should see work-based learning as an innovative pedagogy, not something to do with training...or a bit of work experience.*”

Brodie and Irving (2007, p11) state that “*the development of rigorous pedagogies to underpinning WBL and its assessment is still embryonic*” and Anderson (2009) argues that new pedagogic models are needed for new technologies whilst Wesch (2009) considers the implication of rapidly changing technologies for how we teach and what we teach. Barnett, Parry and Coote (2001) recognise the importance of the ‘self’ domain over those of action and knowledge in WBL curricula design.

Additionally, there is widespread support for the involvement of employers as well as learners and the academy in designing learning (Thérin, 2011; Ferrell, 2011) and for pedagogy to encompass lifelong and life-wide learning, not solely the learning opportunities from a formal education. Thorpe and Mayes (2009, p160) recognise that pedagogy needs to encompass the full gamut of a learner’s experiences and enable the learner to build connections between them. The classroom, workplace, home life and social life can all contribute suitable experiences from which learners can draw resources. Carter (2009, p26) supports these view stating that a suitable pedagogy needs also to embrace the skills agenda as well as be more imaginative and employer focused. Hence, research is showing that new pedagogic approaches are needed to apply the TLRP principles in work-based learning and that new models are needed for the new technologies.

In designing a pedagogy for work-based learners, we need to be mindful of the opportunities provided by including the learner, the employer and the university in the design as well as enabling the learner to include a wide range of experiences outside of the ‘classroom’. Research that could inform a suitable

approach was conducted by Nixon, Smith, Stafford and Camm (2006) who investigated a number of cases studies and presented a series of 13 characteristics for work-based learning (Figure 3.1) that expressed the range of approaches to WBL provision.

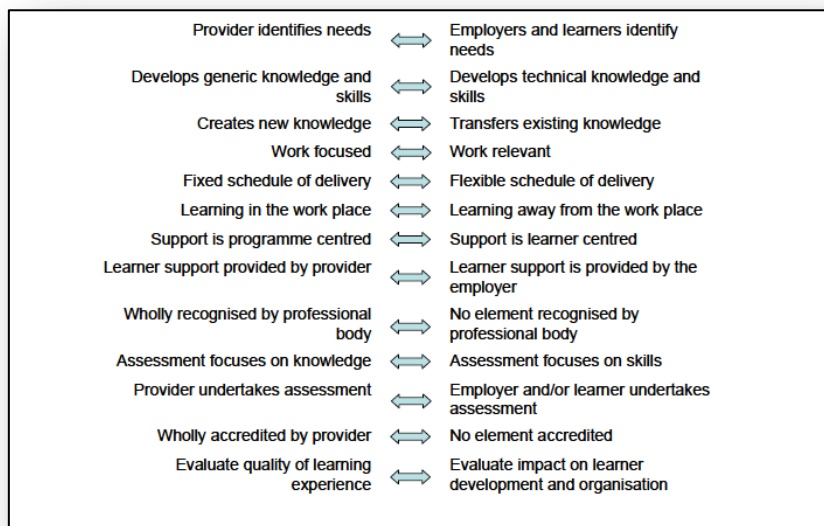


Figure 3.1 Characteristics of work-based learning provision (Source: Nixon et al, 2006,p43)

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The characteristics present a series of continua within which all their case studies sat but they state that it was not possible to determine where on each continuum the ‘ideal’ position was. However, what did emerge was a range of factors that impacted on “*the effectiveness of different pedagogical approaches*” (Nixon et al, 2006, p44) and these are presented in Figure 3.2.

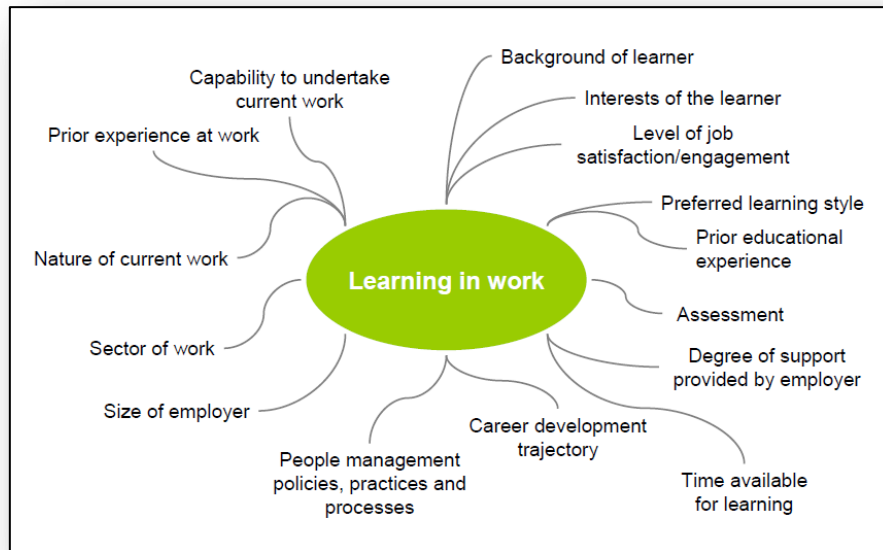


Figure 3.2 Factors impacting on the effectiveness of different pedagogical approaches
(Source: Nixon et al, 2006, p44)

[Permission to reproduce this image has been granted by the Higher Education Academy]

Through the research presented in this section, I have identified a range of authors who recommend that new pedagogies are needed and that technologies could be incorporated in these new approaches. A range of authors recommend that a suitable pedagogy will include both learner and employer in its design, allow formal and informal learning to be incorporated, recognise prior and concurrent learning, be accessible and make use of appropriate technologies. However, I have not found an existing approach that fits the context for the genre of learner that I am targeting through my research i.e. bite-sized learning opportunities for work-based learners in SMEs. What I have identified is a set of principles for effective pedagogies, upon which to found my pedagogic design, as well as research-based evidence of characteristics and approaches that have been seen to be effective.

The “e-portfolio based pedagogy” that this project aims to develop will be a new model within an innovative technology and it will be founded on principles of recognised practice that will draw on relevant, recognised theories and that will “*reflect the importance of the individual in the design of the learning*” (Felce, 2010, p24).

3 On-line learning

The e-portfolio will be a distance learning model for work-based learning located within an on-line environment. In the previous section I researched effective approaches to pedagogic design for work-based learning and identified principles, characteristics and approaches that I can follow in my work. I also identified the potential to develop new pedagogic models that can make use of new technologies; one such technology is an e-portfolio. In order to offer new learning opportunities to work-based learners we need to find ways for them to access learning without needing to attend university. An on-line solution is one such opportunity and is already widely used in a blended approach to existing pedagogies i.e. where on-line activities supplement face-to-face activities and it is to this context that I now turn my attention.

Critics of on-line learning state that there is a danger that on-line learning is a transmission model rather than one that promotes higher order thinking skills required for higher education but this can be avoided through asynchronous network learning (Bullen, 1998 and Bowskill, 2010). Bullen (1998, p31), quoting Harasim, goes on to state that “*appropriate design and facilitation techniques*” and preparation of both students and tutors are essential factors. Anderson (2009) sees the potential new technologies provide to create opportunities to move to knowledge creation models rather than those of transmission. Likewise, Mayes, Morrison, Mellar, Bullen, and Oliver (2009) explore recent work on technology enhanced learning and support the idea that it can transform learning. Research into on-line learning (ALT, 2010b, p7) found that, on average, students performed better than in face-to-face environments, although the best results were found where blended learning approaches were used (i.e. a mixture of on-line and face-to-face). The ALT research found that learners like to see demonstrations and have room to experiment (ALT, 2010b, p9) but staff capability was identified as an issue. Other research into lecturers’ perceptions of the role of on-line learning in their teaching ranged from it being a medium to provide information to one that enabled engagement in “*communication-collaboration-knowledge building*” (González, 2010, p64). Thus there are mixed thoughts about on-line learning, some negative, some positive, others promoting a mixture of on-line and face-to-face, or blended, approach. However, I would

argue that the same could be true of any approach because it is the “*way that they are used that determines their value*” (Sarnoff, cited in McLuhan, 2001, p11). In designing my pedagogy I need to ensure that it is founded on, and follows, principles of effective practice and also that these principles are applied by the tutors and others who are responsible for delivery of learning and for supporting the learners.

In this section I will first consider generic aspects of on-line learning that need to inform my pedagogy. I will then look at issues of accessing the on-line learning and present potential models for designing on-line learning. I will consider the role of the group, or community, in on-line learning before ending with considerations for the choice of on-line learning environment.

3.1 Generic aspects of on-line learning

In 2009 a report into why HE needed to embrace technology, *The Edgeless University*, (Bradwell, 2009) presented a range of potential for on-line learning that universities could use, for instance:

“on-line tools to make student coursework team-based and collaborative” (p37)

“open repositories of on-line content” (p11)

“tools such as twitter and on-line forums” (p41)

Embracing technologies could:

“(open) up new channels to higher education through lifelong learning” (p42)

“(provide) greater access to course and university materials on-line” (p45)

“on-line learning has the potential to reach students who might be unable to attend an institution formally” (p48).

However the report also points out that on-line learning has its drawbacks as it cannot entirely replace the university experience or the social aspect of learning and that it might be more suitable as a “*support or supplement (to) offline provision*” rather than a replacement (p56). This caveat has implications for my pedagogy because it will be entirely on-line and I will need to consider in what ways these aspects can be recreated, as well as consider if we need to recreate them.

In its response to the Demos Report Universities UK stated that universities need to strike a balance between developing their use of technologies to support on-

line learning and the need to design learning opportunities that continue to meet high standards of quality (Universities UK, 2009). Thus ensuring quality is a consideration for my pedagogy.

Beetham, McGill and Littlejohn (2009, p5), Bullen (1998) and JISC (2010a) recommended that universities need to prepare themselves and their learners for on-line learning and that all aspects of the organisation need to be integrated as a precursor to successful implementation. Areas for consideration include strategies, policy and practices, developing literacies within curricula, supporting individuals' development (student and staff) and integrating social, personal and institutional technologies. ALT (2010b, p7) research identified benefits at an institutional level where there was a strategic approach to e-learning that impacted on processes and systems as well as on curricula design and review.

JISC (2010a, p8) highlights the following recommendations for supporting learners in this context:

1. Students need preparation thus induction is an important stage
2. Flexible access to resources is needed
3. Staff development and existing expertise are needed to support new initiatives
4. Students should be consulted as they can make a valuable contribution to design and decision making
5. Share good practice

Quantitative research conducted by Becta with providers of work-based learning (Becta, 2010) found that technology has:

1. increased the choice of methods of learning for learners 64% of providers
2. increased motivation of learners 58%
3. increased learner satisfaction 52%
4. increased choice of learning opportunities available 52%
5. ensured learning experience is more closely tailored to individual learning needs 50%

and

6. Compared to 2007-08 more providers believe technology has allowed learners to have a better choice of learning opportunities

7. Some providers.... felt that particular learners would be put off by technology.

(Becta, 2010, p50)

Another report into student perspectives of on-line learning (HEFCE, 2010), which could have implications for our proposed pedagogy, found, inter alia, that:

1. Students prefer a range of possible learning methods
2. Proactive engagement with students by the university
3. Varying levels of staff and student competence with technology impacts on the learning experience
4. More IT skills training was commonly requested by students.

Meanwhile, Becker (2004) identifies four concerns of students undertaking an on-line course:

1. Assuming you are alone
2. Concern that will fall behind
3. Uncertain about course advice on offer
4. Beginning to doubt core skills.

JISC (2009a, p51) proposes seven key principles for on-line learning:

1. *promote active participative learning*
2. *select the most appropriate tools*
3. *support in using technologies*
4. *understanding how to learn in a digital world*
5. *benefits need to be clearly communicated*
6. *coherence between technologies, learning tasks and outcomes*
7. *technology used needs to extend the potential for learning.*

Becker (2009) presents an alternative view of designing for e-learning (a term which includes on-line learning) where she argues that people need to “*unlearn past behaviours before they can accept that e-learning is a powerful teaching and learning tool*”. In her paper Becker identifies ‘seven deadly sins’ of e-learning:

1. *Old wine, new bottles* - do not repackage lectures, redesign them to be engaging and imaginative making use of appropriate technologies and tools
2. *All the bells and whistles* - do not use a technology just because you can; select the most appropriate technology to meet the learning outcomes
3. *Unhealthy (and unnecessary) competition* - debate between face-to-face or e-learning is not necessary, a blended approach is often the most successful
4. *Jack of all trades* - do not expect everyone to be able to use all technologies, delegate tasks to those best placed to achieve the desired outcomes
5. *Misuse of expert power* - support, engage and enable others to understand, embrace and engage with e-learning in their own time and at their own pace
6. *Because I said so* - use evidence from research and case studies to support your arguments for using e-learning
7. *This won't hurt a bit* - yes it will, be honest about the sorts of disruptions learners and teachers may experience; consider trials before full scale implementation.

An on-line learning model can have impact on the retention of students. Clearly, I need to be concerned about retaining students on a course as well as recruiting them to the course. The pedagogic design, of both the course and the infrastructure, can impact on a learner's decision to continue or to leave. The JISC "Exploring tangible benefits of e-learning" study found:

"clear evidence of improved student retention as a result of the improved personalisation and mentoring opportunities afforded by e-learning applications such as e-portfolio systems."

(ALT, 2010a, p15)

Other reasons for improved retention included the interactions within the on-line environment, support and engagement through extended forms of contact and the enablement of better feedback.

Edwards and Minton's work (2009, p117) shows that part-time distance learning students have different reasons for staying on a course or leaving. Edwards' Retention Scales for part-time distance learners presents factors that affect retention of this genre of learners. Edwards posits that when these factors

(institution type, work/family, health, mature, part-time, academic and pastoral support, interaction, first year experience, course choice, motivation and take-up) are out of balance a reduction in performance and ultimately withdrawal from the course will result. Six approaches to aid retention of part-time distance learners are recommended:

1. A specific strategy for retention for this genre
2. Pedagogy and curricula should not try to recreate an on-campus experience
3. A personal tutor system should be prioritised
4. Pre-entry and induction support needs to be bespoke
5. Students should not undertake more than 24 hours study per week
6. Courses need to allow alternative step-off and return points.

Consistent messages throughout these reports and recommendations are the potential learning opportunities that can be made available through on-line models but in order for them to be effective an institution needs to provide support for learners and tutors in using and accessing these new environments as well as the need to apply principles of good pedagogic practice. They reinforce my argument that a new pedagogy is needed and that an effective pedagogy is wider than the curriculum, it needs to include issues such as learner and teacher abilities as well as the university infrastructure (policies, practices, systems and processes). I would also add the need for the learners' workplaces and, or, home environments to be considered. Richardson (2009), for example, reports potential difficulties in accessing on-line learning where employers have firewalls and other security systems. This is in alignment with the TLRP principles, discussed earlier, and with my notion of a context-engaged approach.

3.2 Accessing on-line learning

One issue, identified above, which is key to the success of on-line learning, is the ability of the learners and their tutors to engage with the learning environment both in terms of access to the technology and secondly in being able to use the technology.

JISC (2009b) research identified potential inequalities in ownership of technology and that levels of confidence in its use vary considerably. On-line learning has the potential to increase divisions between those who have computers and those who do not, rather than it being a means to promote

inclusion (Gaskell, 2010; Seale, 2010). The JISC report recommends a range of strategies for institutional managers including: monitoring technology ownership, assessing IT skills of incoming learners, providing guidance on the use of technology supporting learning, embedding technologies in the curricula, enabling access from off-campus and providing support that is accessible off-campus.

Peng, Su, Chou and Tsai, (2009, p177), writing about mobile learning, or m-learning¹, recommended that access to learning through mobile devices “*should be intuitive enough so that mobile learners can interact with it in a short period of time*” and further, that “*learners should learn ‘with’ technology and use technology as a mind tool that supports active, constructive, co-operative, authentic and intentional learning*”. Whilst my pedagogy is not specifically considering m-learning, the idea of supporting learners and intuitive technology is relevant to an e-portfolio. M-learning could be a future consideration for the pedagogy.

In addressing the need to support learners in their use of technology and the need for it to be intuitive we can consider the affordances that the technology offers. Affordances was a term appropriated by Donald Norman in 1988 for use in the context of human-machine interactions. Affordances “*provide strong cues to the operation of things*” (Touretzky and Tira-Thompson, 2008) and can be further explained by the following quotation:

“Well-designed objects make it clear how they work just by looking at them. Some doors have big metal plates at arm-level. The only thing you can do to a metal plate is push it. In the words of Donald Norman, the plate affords pushing. Other doors have big, rounded handles that just make you want to pull them. They even imply how they want you to place your hand on the handle. The handle affords pulling. It makes you want to pull it.”

(Spolsky, 2000)

The concept of affordances is something that I have often heard referred to as being intuitive, or more often where it is “not intuitive” when it is not obvious what one needs to do, or where what appears to be an obvious solution is actually something else. The analogy of a plate to push and a handle to pull is one that I can associate with as I have often tried to pull open a door by its

¹A newer variation of on-line learning where technologies such as smartphones and wireless enabled tablet computers allow access to learning whilst ‘on-the-move’.

handle, when actually I needed to push, and felt quite frustrated by the unnecessary effort needed to open the door. Humans are likely to respond in a particular way to a stimulus so in our design we need to be cognisant of this and ensure that the new pedagogy offers affordances: handles that do need to be pulled, rather than ones that need to be pushed.

In being able to use a technology another consideration is the, so called, digital literacy of each individual. The potential learners in the small to medium sized enterprises who are the target market for this new pedagogy will cross the full age range from teenage school leavers to those approaching retirement. Across this age range there will be a wide range of experience in relation to use and understanding of technology. Prensky (2001a and 2001b) wrote about the concepts of Digital Natives (those who have grown up with digital technologies) and Digital Immigrants (those who have adopted the technologies later in their lives) and the differences in their approaches to learning and teaching. In presenting this divide Prensky also presents a generational divide, younger people are Digital Natives, older people, if they use technologies, will be Digital Immigrants. However, more recent research (Haigh, 2011) has shown that there is no evidence of such a divide although younger people are more likely to have a positive approach to using technology. This later research showed that *“a good attitude to technology, at any age, correlates with good study habits”*. Anxiety levels of adult learners towards the internet was researched by Collins and Veal (2005, cited in Bromley and Moss, 2009) stating:

“perceptions of their abilities to access information are an integral component of their anxiety levels and this may act as a barrier to engagement”.

Thus the research by Haigh and by Collins and Veal suggests that my pedagogy should be more concerned with learners’ attitudes to technology than whether they are digital natives or digital immigrants, and the pedagogy needs to be cognisant of the learners’ anxiety levels.

The pedagogy I am developing will require learners to have access to, but not ownership of, technology. This access can be at work, at home or at an alternative environment such as a library or other community-based facility. My expectations are that the learners will represent a wide-range of experience, competence and confidence in the use of technology, that most will not have experienced on-line learning and that none will have used an e-portfolio based

environment. Whilst I cannot change the attitude they have to technology when they start on their studies I can endeavour to design the environment with affordances that encourage a good attitude, through it being a good experience and by providing easy and intuitive access to information and the learning environment. In seeking affordances and to design a learning environment that will offer an effective pedagogy I will now look at suggested models for on-line learning.

3.3 Models for on-line learning

Models for on-line learning have been developed and tested including Salmon's (2002 and 2003) five stage model: access and motivation, on-line socialisation, information exchange, knowledge construction and finally development whilst Johnson and Aragon, 2003 (in Bromley and Moss, 2009, p48) put forward:

“on-line learning environments contain a combination’ of the following 7 principles: address individual differences, motivate the student, avoid information overload, create a real-life context, encourage social interaction, provide hands-on reflective activities and encourage student reflection.”

(in Felce and Purnell, 2011, p49)

Salmon's model is presented as a progressive approach, starting with “*access and the induction of participants to online learning (as) essential prerequisites*” and which is “*at the base of the flight of steps*” (Jacques and Salmon, 2007, p43). This aligns with my argument in the previous section that learners need to be able to access the on-line environment and the learning opportunities it offers. Johnson and Aragon do not specify a stepped approach choosing instead to recognise principles for an on-line learning environment. However, there are similarities and comparisons that can be made between the two models:

- motivation / motivate students;
- on-line socialisation / social interaction;
- information exchange / avoid information overload / create content;
- information exchange as part of knowledge construction through social interaction
- development (including reflecting on the learning process) / reflective activities and student reflection

Johnson and Aragon's suggestion that individual differences are addressed is covered in the five stage model through the induction/access and establishing an

individual on-line identity as part of stage 2 and at stage 5 where participants look to achieve more personal goals.

Jacques and Salmon state that Salmon's five stage model was developed "*from the experience of participants in early computer-mediated conferences*" (Jacques and Salmon, 2007, p42) and claim that it "*shows how to motivate online participation.. build learning through appropriate on-line activities and pace e-learners through online courses*" (Jacques and Salmon, 2007, p42).

Although initially designed from computer-mediated conferences this five stage model is relevant for my proposed pedagogy because it offers a structured and developmental approach to engaging the learner and getting the learner to engage with the learning. A scaffolded, or structured, approach and one that promotes the active engagement of the learner are two of the principles for effective pedagogies, discussed in an earlier section. The inclusion of opportunities for reflection is also relevant to work-based learners. I discuss this in detail in a later section.

Computer-mediated communication was also the subject of research by Garrison, Anderson and Archer (2000, 2011). These authors examined how groups of individuals collaboratively engage in an on-line environment to achieve a higher education experience. They produced a theoretical framework the 'Community of Inquiry' (Figure 3.3) that:

"represents a process of creating a deep and meaningful (collaborative-constructivist) learning experience through the development of three interdependent elements - social, cognitive and teaching presence."

(Garrison, Anderson and Archer, 2011)

These authors state that text-based communication can provide time for reflection and that a community is important in developing and supporting higher level thinking. Text-based communication can be conducted both synchronously (at the same time) and asynchronously (at different times). In addition they state that:

"An educational community of inquiry is a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding."

(Garrison, Anderson and Archer, 2011)

Community of Inquiry

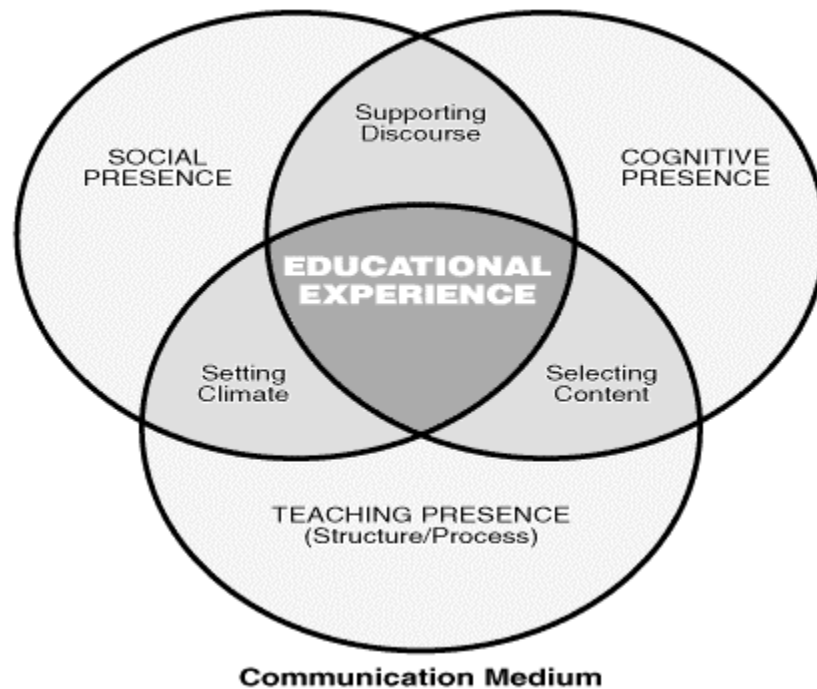


Figure 3.3 Three interdependent domains to create and support a Community of Inquiry
(Source: Garrison, Anderson and Archer, 2011)

[Permission to reproduce this image has been granted by D. Randy Garrison]

Garrison, Anderson and Archer's model concurs with the structure for on-line learning presented in the five stage model, and the 7 principles approach as well as the principles for effective pedagogy. Furthermore it provides a view of the interrelatedness of different constituent domains that together can be used to structure an on-line educational experience.

The authors quoted in this section all refer to sharing and exchange of information as being elements of on-line learning and thus recognise the role of the group in providing opportunities for learning: Salmon refers to information exchange and knowledge construction, Johnson and Aragon to social interaction whilst Garrison, Anderson and Archer talk of groups of individuals in a collaborative-constructivist Community of Inquiry. Earlier in the chapter I also presented the work of TLRP (no date), David (2009) and Brown 2009 which spoke of '*social processes*' as part of effective pedagogies, Bradwell (2009) who considered the social aspect of learning and Bullen, (1998) and Bowskill (2010) who presented the idea of asynchronous network learning to promote higher

order thinking skills, rather than on-line learning being used as a transmission model. There is therefore widespread support for social interaction, or what could be referred to as group work or network learning, as part of my e-portfolio based pedagogy. In the following section I will look in detail at the concept of group work as it applies to on-line learning and how this is relevant to my proposed pedagogy. The role of social interaction and socially constructed learning will be discussed in a later section.

3.4 On-line communities for network learning

Group activities have a role to play in enabling learning that needs to be incorporated as an integral part of a pedagogy (Smagorinsky and Fly, 1993). Collaborative processes can also enhance learning and reflection (Clifford, 1999, p117). Cousin and Deepwell (2005, p63) state the “*need to focus on the construction of a learning architecture which can enable rich forms of learner participation*” through networked learning that has peer learning at its heart and is accessed through a medium that “*supports reflective practice*” and “*balances exploration with anchorage*”.

Brown (2003, p179) recognises the role of reflecting collaboratively, within a work-based context, as being a means to create knowledge and as a possible lead to practice modifications. Brown (2001, p18), writing about the process of community building in distance learning classes found that the loneliness reported by some distance learners was overcome once they had formed a community of learners which offered mutual support. Brown also found that:

“students utilising computer-mediated communication said they generally took a longer period of time to create bonds of friendship, community or camaraderie than they might have in face-to-face associations”.

(Brown, 2001, p32)

Levinson (2006) also presents some of the pitfalls in on-line communities such as the potential to marginalise or exclude some learners, delays in recognising non-engagement and a potential to adopt a surface approach to learning. These are not unique to on-line learning environments but it could be argued they are more difficult to spot than in a face-to-face situation. For example, lack of engagement in a face-to-face lecture can be identified through non-attendance or the watched behaviour of someone who attends but does not engage. In an on-line environment, particularly an asynchronous one (where participants have

a flexible time-frame in which to engage), non-attendance, through not logging-in or not responding to activities, could be learners choosing to delay their response, which is acceptable, or to non-engagement, which is not acceptable. Within my pedagogy I will need to consider how I can check learner engagement but not limit individual choice in when and where to study.

Issues of potential marginalisation or exclusion have also been identified in the earlier sections on generic aspects and accessing on-line learning. Again the pedagogy will need to consider how to minimise or avoid these particular pitfalls. Learners who feel that they ‘belong’ to a community have been found to be less likely to withdraw from a course of study (Mackie, 2001; Martinez and Munday, 1998; Tinto, 1975, in Draper 2005; and Wiley, 2002) whilst Yorke and Longden (2007) found that “*making friendships was considered critical for a positive experience of HE*” (Felce, 2007a, p17).

A community of practice is said to emerge where individuals are engaged “*in a process of collective learning*” (Wenger, c.2007, cited in Smith, 2009). Each cohort studying a common unit on-line (as is planned for in my pedagogy) could be described as such a community because they exhibit the crucial characteristics of domain (a shared domain of interest), community (they interact and learn together) and practice (they are practitioners in the same area of learning). However, this would go against a premise that “*communities of practice are mostly informal and distinct from organisational units*” (Wenger, 1998, p2) and that what we are creating within our cohorts is actually a community of interest (because they have a common interest) or a geographical community (because they are in the same virtual location). If we do have communities of practice then they need to be nurtured and developed, with internal leadership and support, legitimated participation, have a strategic context and be attuned to real practice (Wenger, 1998, p7).

Despite Wenger’s assertion that communities of practice are mostly informal, Keenan, Kumar and Hughes (2010, p2) argue that “*they can also be formed more formally for a particular purpose*” thus the cohorts studying on-line can be regarded as a community of practice. An on-line course delivered through a UK based university contained many collaborative tasks in order to help build a community of practice and to share collaborative learning but it was noted that the “*amount of time required to fully develop the Community of Practice should not be underestimated*” (Bromley and Moss, 2009, p53). Each unit in my

pedagogy is intended to run for a notional ten weeks. Learners will be able to progress onto other ten-week units, but these will not, necessarily, be the same unit as others in their cohort. This ten week 'turn-round' might not be sufficient time to fully develop a community and I should consider this in my design and evaluation.

Thomas (2009, p128) questions the role of the lecturer in on-line learning and asks if they watch the students constructing their learning or if they should have a more active role in which they are "*an architect of the network and activator of communities*". It is likely, at least in the initial units studied, that the lecturer will be the architect and activator as described by Thomas until learners become more confident in their own abilities. As was stated earlier, it is likely that learners on the units will expect the teacher to take control of the learning design but that this control can gradually be released as the learners gain confidence. Whether or not this can be achieved within a ten-week study period is, again, something to review during the project.

Wenger, White and Smith (2009) in their book on Digital Habitats recommend approaches to design and stewardship of on-line communities that could be applied to the context of my project. The authors present five key principles for stewarding an on-line community that we can apply in the context of my proposed pedagogy (Table 3.2)

Principles for stewarding on-line communities	Application in context of an e-portfolio based pedagogy
Vision before technology	My vision was to create a learning environment that would be accessible to work-based learners and that would allow them to bring together all aspects of their life-long and life-wide learning (See Figure 2.1). An e-portfolio was identified as a potential technology that would enable this vision.
Keep it simple	The e-portfolio offers a potential ‘one-stop’ environment for learning content and individual and group activities. Only one technology will need to be ‘learnt’. I plan to make use of the affordances that the technology offers to ensure the learning environment is intuitive for the learners.
Let it evolve	Learners will be guided by tutor-led questions and also encouraged to communicate with their peers without tutor intervention.
Use the knowledge around you	I aim to make use of colleagues who are familiar with designing and supporting learning in an e-portfolio environment and to build capacity by employing them as mentors to other academics.
Always back it up	The e-portfolio “ <i>resides on two (physical) servers - web and database, respectively. There is a duplicate test platform of identical specification and configuration, which acts as a backup platform in case of hardware failure affecting the live platform. Both live and test platforms are on maintenance agreements with the server supplier for fast response to any reported hardware issues</i> ” (Soden, 2011).

Table 3.2 Application of principles for stewarding on-line communities within the proposed pedagogy

Through my literature review and discussions earlier in this chapter looking at general pedagogic principles, at aspects of on-line learning and at the concept of social interaction as a constituent part of learning I have established that an on-line community, or group, was an essential element of my proposed pedagogy. Having established that I need to have a community of learners I now turn my discussion to identify an optimum group size for each cohort of learners. In addressing the issues raised earlier in this chapter I determined that I needed to build in group activities, ensure that learners in each group would be able to

contribute, that a range of contributions could be shared and that each cohort could be adequately and appropriately supported by a tutor.

3.5 Group size for on-line learning communities

Research into group size in learning and teaching contexts predominately considers the relationship between either class size and performance or class size and course effectiveness within a face-to-face teaching environment. Results are inconclusive or contradictory and neither prove, nor disprove, a positive or negative relationship between the variables (Davern, Davies and Loi, 2006; Gibbs, Lucas and Simonite, 1996; Toth and Montagna, 2002). Whereas Pallof and Pratt (1999) recommend class sizes of between 15 and 25, Arias and Walker-Douglas (2004, p312) showed that “*size does not seem to matter, once it rises above 20 students*”. However they also refer to other studies that show the opposite and propose other factors that impact on performance e.g. in smaller groups students try harder because they are known to the teacher, they are more likely to attend regularly, they feel more comfortable about asking questions and giving responses and the dynamics of the lecture may differ to those of a larger group. Borland, Howsen and Trawick (2005) agree with the idea that there are other factors to be considered and found that the relationship between size and achievement “*is not only non-linear, but non-monotonic*”. Dillon, Kokkelenberg and Christy (2002) found that results depended on the course of study: some are more suited to lectures, others to smaller classes.

Research into class size and on-line courses by Drago and Peltier (2004) found that interaction with the tutor was more important than class size in perceived course effectiveness. They considered six dimensions or ‘building blocks’ that they posit are “*significant predictors of course effectiveness*” (course content, course structure, instructor support and mentoring, instructor-student interaction, student-student interaction, information delivery technology) and found that only instructor support and course structure were impacted on by increasing class size stating “*the association with class size was surprisingly positive and significant*”. However, they conclude by stating that their results might not be statistically significant.

Garcia (no date) presents maximum class sizes for on-line learning in USA as 20-35 and Australia as 25-30 but the evidence base for these is not given. Jacques and Salmon (2007, p10) consider group characteristics and how these change with group size stating that groups of six or fewer participants are not effective

due to the “*degree of intimacy, whether physical or virtual, offered by close proximity*”; groups of 12-25 mean the likelihood of “*interaction decreases and sub-groups start to emerge*”; with groups of over 25 “*effective interaction between everyone becomes almost impossible*”.

Thus the research into the optimum group size for on-line learning is not conclusive, however I find that the work of Jacques and Salmon is particularly relevant because it looks at the group characteristics for on-line learning. I have earlier shown why my pedagogy will incorporate group, or network, learning and why establishing a group (or community) is important (to socially construct learning, for social interaction, for ‘belonging’). I have to recognise potential difficulties in the development of a community because of it being on-line and the relatively short time for it to develop (a notional ten week study period), I also need to be cognisant of other factors such as costs and financing: larger group size means economies of scale in terms of tutor time and number of repetitions of delivery, whilst also needing to create an effective pedagogy that will provide an excellent learning experience (if the learners do not enjoy their experience, they will not come back for more!). As a consequence of these deliberations I decided on an optimum group size of 16 with a maximum of 25. This would allow for some economies of scale in terms of delivery and although it presents the potential for sub-groups to emerge it also offers good opportunities for network learning through group interactions.

I have shown that optimum group size is one of the factors that impacts on the success of on-line learning and that it needs to be taken into account when designing the pedagogy. I have also explained how an on-line environment can provide a rich learning opportunity but that the pedagogy needs to be cognisant of the potential pitfalls and avoid these, where possible. The technology used in creating the on-line environment also needs to enhance learning (ALT, 2010a, p2). In the following section I look at considerations relevant to choosing an appropriate technology.

3.6 Choosing a suitable on-line environment

In selecting a suitable on-line environment we need to consider its role in providing at least some of the infrastructure identified as necessary to support work-based and on-line learners. In the previous sections in this chapter I have shown how such a technology needs to be accessible. Its use needs to be intuitive, offer opportunities for collaborative working, provide access to

learning materials, support an individual's development, support lifelong learning and a range of learning methods. In addition, I also need to be able to assure quality and retention and be cognisant of the different abilities of both tutors and learners.

Wenger, White and Smith (2009, p158) recommend a number of aspects to address when seeking a suitable on-line environment, which they refer to as a *digital habitat*. These are:

1. Can you use what you already have?
2. Can the infrastructure be configured for the planned community?
3. Are there any issues with the existing tools e.g. synchronous / asynchronous interaction; group activity / individual activity?
4. Does one platform meet all your needs; can it accommodate the whole community; is it intuitive to use; does it support multiple communities?
5. What is the cost and what is included in the price?
6. What role does the vendor play and what is the relationship with the vendor?

At the University we support two on-line learning environments: the virtual learning environment (VLE) and an e-portfolio. The e-portfolio was chosen for this project because of its perceived ability to provide a learning environment that would meet the identified needs of our target groups of work-based learners. It also conforms to the six questions raised by Wenger, White and Smith:

1. it is a technology we already have and that is widely used across the University
2. it can be configured for the planned community (see Chapter 2)
3. existing tools can be used for both synchronous and asynchronous activities; there are tools that allow both individual and group activities and one-to-one private discussion between peers or between tutor and learner
4. my expectation is that the e-portfolio platform will meet all my needs, the whole community can be accommodate as well as multiple communities: individuals can also be members of multiple communities. The technology is not intuitive, depending on how it is used. I will need to build affordances into how we use it for the pedagogy

5. there is no additional cost to the learner as access to the e-portfolio is included within the fee; the University provides support in using the software and storage space on the University servers
6. the technology was co-developed between the University and the vendor and a fully symbiotic relationship continues to be supported.

Thus an e-portfolio meets my identified criteria for a suitable on-line environment. In the following section I will review three key pedagogic concepts that are relevant to the e-portfolio based pedagogy and will then explain how the e-portfolio will be used to create a suitable environment.

4 Concepts for an e-portfolio based pedagogy

Three pedagogic concepts that are key to the e-portfolio based pedagogy are constructivism, scaffolding of learning (within and outside the curricula) and reflection on learning. These are now outlined and discussed.

4.1 Constructivism

Constructivism is an epistemology that proposes that “*humans generate knowledge and meaning from an interaction between their experiences and their ideas*” (Wikipedia, 2011) and the idea of the “*notion of continuous building and amending of structures in the mind that ‘hold’ knowledge*” (Fry, Ketteridge and Marshall 2009, p9). These structures or ‘schemata’ will change as learning occurs; if they do not change, then learning will not happen.

Constructivism argues that people construct their own knowledge (Biggs and Moore, 1993) and that learning involves a process of transformation (Mezirow, 1991 and 2000). Lave and Wenger (1991) argue that work-based learning is situated in the community of practice in which it occurs and that learning is a social practice in which the transformation of the schemata required for learning to occur is not an individual activity. Knight and Bush (2009, p543) argue that the social constructivist learning theory influenced the development of Moodle (an open source internet based e-portfolio software application). Likewise, Sutherland, Brotchie and Chesney (2011, p6) state that PebblePad, the e-portfolio used for my project, “*supports individual and social constructivism*”.

One of the points I raised in my discussion on pedagogies for work-based learners was the need for an effective pedagogy to encompass prior and concurrent experience and learning, formal and informal learning: the lifelong and life-wide

learning that an individual experiences, and to provide the learner with the skills and tools needed to build connections between them. It is through building these connections that learners are able to generate knowledge and meanings; the learners make sense of them within their own contexts. Discussion and interaction with others, through network learning and other community-based activity, provide other perspectives and understandings that inform learners in this connection-building.

The pedagogy we develop will be built on these principles of constructivism and of social constructivism. In order to enable our learners to generate their own understandings and thus construct knowledge and meaning as well as to achieve a transformation as part of their learning process we can provide a structure that will assist. Such a framework is known as ‘scaffolding’ and it is to this concept that I now turn. I will first consider scaffolding learning i.e. within the curricula and then scaffolding outside the curricula.

4.2 Scaffolding learning

It has long been recognised that most learners require guidance to support their learning. Bruner (2006a and 2006b) and Wood, Bruner and Ross (1976) were early theorists of this concept that they referred to as “*a kind of ‘scaffolding’*” (Wood *et al*, 1976, p90). Benson (1997, in Lipscomb Swanson and West, 2004, p3) asserted that “*if scaffolding is properly administered, it will act as an enabler*”. Whilst Lipscomb Swanson and West, (2004, p4) talk about scaffold being that which supports “*the move from what is known to what needs to be known*”, with reference to Vygotsky’s zone of proximal development (ZPD). Scaffolding within the ZPD to support learning is referred to by Brill, Kim and Galloway (2001, p10) who describe scaffolding as:

“a structure that supports students while they work at a level higher than their ability allows without assistance.”

Kaider, Henschke, Richardson and Kelly, (2009, p497) state that

“novices and advanced beginners require more learning support and scaffolding which decreases as they become more expert.”

Scaffolded learning is also one of the ten principles of effective pedagogy (Brown 2009; David, 2009; and TLRP, no date b), the explanatory note (to the principle) recommends that “*when these supports are removed the learning needs to be secure*” (TLRP, no date b). Cazden (1979, p11, cited in Smagorinsky

and Fly, 1993, p168) also recognises that a scaffold can be replaced, once it has served its use, with a “*new structure for more elaborate construction*”.

Some writers see Bruner’s concept of instructional scaffolding as rigid and one-directional (i.e. teacher to student) and argue that Vygotsky’s ZPD concept was more dynamic, requiring interaction between the teacher and the student (DiPardo and Freedman, 1988, and Dyson, 1990, both cited in Smagorinsky and Fly, 1993, p170) and that what is needed is an alternative instructional approach that provides students “*the means of interpretation through a constructive interaction*”. Hence effective scaffolding for learning needs to be multi-directional and flexible.

Rourke and Coleman (2009) discuss the use of scaffolding to support a constructivist approach to learning and put forward the concept of procedural scaffolding.

Lipscomb Swanson and West (2004, p7) present a five stage approach to instructional scaffold that will “*develop self-regulation and independence*”: modelling desired behaviours, offering explanations, inviting participation, verifying and clarifying understandings and inviting contributions from students.

Scaffolding’s use to develop critical thinking is recommended by Wass, Harland and Mercer (2011) and the existence of informal scaffolding, such as peer support, and peer-tutor conversations, are identified. Saye and Brush (2002 cited in Lipscomb Swanson and West, 2004, p10) refer to soft scaffolding (dynamic) and hard scaffolding (static and specific).

Yelland and Masters (2007) use the term technical scaffolding “*in which computers replace teachers*” whilst Lai and Law (2006) look at how educational software provides scaffolding for learning. James and Pollard (2011, p291) also recognise the potential role of computer programmes to provide scaffolding in situations where there is limited, or no, access to the ‘*more expert other*’ but with the caveat that any technology is chosen and used appropriately. Becta (2007, p5) recognise that e-portfolio software contains “*structured processes and organisational tools*” that scaffold learning and that will support the learners until they are confident enough to work independently.

It has also been recognised that scaffolding is needed for work-based learners (Gray, 2001, p319) and that it can also be used to support learners to transfer

learning to and from HE and work by providing the “*attention to initial learning*” to facilitate transfer (Mestre, 2002, p4).

One example of scaffolding in the design of learning can be seen in Gagné’s “The Conditions of Learning”, published in 1965, in which he identified the mental conditions for learning which he presented as nine events:

1. Gain attention
2. Inform learner of objectives
3. Stimulate recall of prior learning
4. Present stimulus material
5. Provide learner guidance
6. Elicit performance
7. Provide feedback
8. Assess performance
9. Enhance retention and transfer

(Source Ryerson University, no date)

These events provide a scaffold around which learning activity can be developed.

All of these writers recognise that scaffolding provides a structure, or a framework, that supports learners and that it can be used to help them construct their knowledge and understanding and so enable meaning-making. Scaffolding can be seen to be transitory: it helps a learner move forward at a particular point in a learning journey, it adapts as the learner starts to understand and it is no longer needed once the learner achieves a particular learning goal. However, a new form of scaffold will be needed to support the next part of the journey. The writers I have quoted also suggest that scaffolding takes on different forms: some at different stages in the learning journey others for different aspects of that journey; instructional scaffolding, scaffold to develop critical thinking, procedural scaffolding and informal scaffolding. Other writers quoted posit the role of technology to provide scaffolding which is an important idea for my project in that my pedagogy is based within a technology and the learners will be on-line and thus the technology will need to be used to replace, or at least significantly supplement, the tutor.

With my background in the construction industry, scaffolding is a term, and indeed a technology, with which I am very familiar. Scaffolds, in the construction industry, are “*temporary working platforms, erected around the perimeter of a building or structure to provide a safe working place at a convenient height*” (Chudley and Greeno, 2008, p126) and “*temporary structures, constructed to support a number of platforms at different heights to enable operatives to reach their work and to permit the raising of materials*” (Foster, Harington, Greeno, 2007, p343). Scaffolds take on a variety of forms at different stages in a building’s construction. Initially they are likely to be external to the building, as indicated in the definitions quoted, and provide a framework that encloses the building to allow the external walls to be erected (a dependent constructor’s scaffold). Other, more specialist scaffolds, such as cantilever scaffolds or truss-out scaffolds provide access to more complex structures. Once the building envelope is complete a birdcage scaffold might be needed within the building to provide a platform for the erection of lighting, heating and ceilings. At a later stage a smaller, more mobile scaffold, often on wheels, may be required to access individual parts of a ceiling. To access walls for decorating a fixed, working platform might be provided and later still a simple scaffold, in the form of a ladder or a set of steps, will normally provide an adequate framework to access the work area.

Thus I see an analogy between the way that scaffolds provide a framework to allow a builder safe access so she can construct a building and in the way that scaffolded learning provides a framework to allow a learner to access and so construct her learning. As the building becomes more stable and begins to take shape the type of scaffolding can be altered to suit the changing need in the same way that the scaffolding needs of a learner will change as she moves along a learning journey.

Returning again to the writers on scaffolding in the context of my e-portfolio based pedagogy project, I can summarise that what they have in common is the recognition that learning, particularly about new ideas and concepts, needs to be supported through “*designing a structure to provide trigger questions*” (Felce and Purnell, 2011, p38), or other tools and techniques to help bridge the gap between what students already know and what they need to learn. My assertion in proposing the e-portfolio based pedagogy is that “*e-portfolios are well suited to this aim*” (Felce and Purnell, 2011, p38).

4.3 Scaffolding outside the curricula

Thus far, much of my discussion around the role of scaffolding has been in relation to its use to scaffold learning within the curricula, however there is a wider role that scaffolding has to play in the pedagogy i.e. beyond, or outside, the curricula through supporting and enabling the learner and others involved in enabling that learning.

It is recognised that work-based learners need to be supported before, during and after their learning (Pickford, 2009) whilst Lester and Costley (2010, p565) state that learner support needs are different for work-based learning contexts. In relation to on-line learning, Bibby (2009) states that virtual systems are not always effective in supporting learners based in the work and suggests that a tutor based in the workplace can be beneficial to the learner, the employer and the university. Such a tutor would be easily accessible, would understand the context in which the learner is situated and would be able to deal with the challenges of supporting work-based students (Table 3.3). Carter (2009) also stated that support needs for work-based learners are likely to be different in many ways to those provided for full-time students.

Aspect	Work-based learners
Motivation, choice and initial assessment of personal ability to succeed	Employer may choose course May be no pre-course support or assessment Students may not want to reveal a weakness that may impact on their job e.g. dyslexia
Proximity / access to student support services	May be limited to contact via internet or through employer
Non-academic learning related	Work schedules may interfere with learning
Time	Time to study may be limited: May not have time allocated in work Work schedule is unpredictable Little experience of writing for assessment May not have skills needed
Academic / learning related	May not have a personal tutor Access to learning may be on-line but may have limited access from work and/or home Establishing a peer group may be difficult; may be location issues; may involve superiors within same organisation

Table 3.3 Challenges of supporting work-based learners (Bibby, 2009, pp6-7)

However, in my context, i.e. that of small to medium sized enterprises, it is probable that most learners will be the sole employee studying from that organisation and it would not be financially viable to provide an in-company tutor. Nevertheless, the issues that Bibby raises are relevant to the pedagogy that we are developing and need, if possible, to be resolved through the model we create.

A review of research literature focused on foundation degrees (involving work-based learning) found that appropriate tutorial support is vital for distance learning and that effective personal tutors assisted the learner in making the link between higher education and their employment but it did not specify that the tutor had to be situated in the employer's organisation (Harvey, 2009, p77-78).

A book on managing distance and open learning courses (Becker, 2004), written as a self-help resource for learners on such courses, also provides insights into considerations for course designers to address in their pedagogy such as opportunities for peer-to-peer and peer-to-tutor communication, self-assessment exercises, course timetable, access to learning and other resources, learning outcomes, learner and university expectations, availability of tutor support, developing study skills and strategies and access to support if things go wrong.

Further evidence of the need to consider scaffolding outside the curricula can be seen in the following works. Owen looks at this wider view and argues that e-portfolio implementation within an institution needs to be scaffolded:

“educational institutions wishing to adopt e-portfolios need to draft a policy that states the ethos informing the institution’s decisions, as well as formalising the guidelines around their use.... If an e-portfolio initiative is to be successful, a bottom up approach that empowers academic practitioners is essential. Sufficient resources need to be made available.”

(Owen, 2009, p734)

In their work-based learning impact study Costley and Abukari (2010) recommended that organisations:

1. Consider the WBL pedagogy in more detail
2. Develop methodologies for the worker as researcher

3. Change the processes and procedures within the university to better accommodate work-based learners
4. Create a closer working partnership between university, employers, employees and other stakeholders.

The need for new approaches, a changing pedagogy, training for advisors and appropriate support systems is echoed by Costley, Shukla and Inceoglu, (2010, p36). Coolin, Harley, Smallwood and Wood (2010a) recommend “*bringing technical support, pedagogic support and senior management support together*”.

Earlier in this chapter I identified other writers who support, directly or indirectly, the notion of scaffolding beyond the curricula: principles for effective pedagogies cover educational values and purposes, personal and social processes and relationships and teachers and policies as well as curricula and assessment, the need for preparation of both students and teachers for on-line learning, the need to meet high standards of quality, integration of all aspects of the university and the benefits of a strategic approach, and the role of extended forms of contact (beyond the curricula) to encourage student retention. Hence, although part of my focus in my project will be on scaffolding learning within the units of study, I also need to look at how my pedagogy can be developed to provide scaffolding for learning in other areas such as in developing quality assurance models, in preparation of tutors to work on-line, as learner support to access student facilities such as counselling and guidance, to provide on-line registration and payment, to enable achievement to be recorded and progression onto other units or other studies to be facilitated. As was stated earlier, one of the reasons for choosing an e-portfolio as the basis of my pedagogy, is its apparent potential to support the wide range of learner needs as well as some of the institutional needs (Figure 2.1 e-portfolio based pedagogy concept map). Where the e-portfolio cannot meet the identified needs I will need to find alternative scaffolding, if possible through existing structures within the University.

Thus far, in this section, I have shown how the principles of constructivism and scaffolded learning apply to an e-portfolio based pedagogy. I will now look at the third concept, that of reflection on learning.

4.4 Reflection in work-based learning

Reflection is a process by which learners can internalise a lived experience and by which they can begin to construct their own meaning (Sutherland, Brotchie and Chesney, 2011, p18). The benefits of reflection to support and improve learning have been noted by a number of writers: Schön, through his work in 1983 (*The Reflective Practitioner*) and 1987 (*Educating the reflective practitioner*), recommended the need for reflection in professional knowledge and its continual development. More recently, Hart and Bond (1995, cited in Brown, 2003, p178) stated that “*reflection is an activity where experience is explored in order to develop new understanding*” whilst Appleby (2009 cited in Canning and Callan, 2010) uses the term meta-reflection to indicate the process of reflection-on-reflection through dialogue, listening and enquiry to generate criticality. Barney (2010) states that reflective writing can “*actively transform instead of passively inform*” and that a journal “*is a tool for facilitating student learning in higher education*”. Cox (2007) proposes that a reflection tool makes for better learning where she sees reflection as a bridge between learning and experiences and states that reflection plus confrontation leads to learning. Roberts and Mizban (2009) argue that recording and reflecting lead to beneficial outcomes and they recognise the value of a structure to help their students to reflect. Samuels and Betts (2007) also note the role of a structure and scaffold in supporting reflection proposing the use of the Kolb cycle of experiential learning (Kolb, 1984) in self-assessment to support deepening reflection. In the context of e-learning, technological platforms like e-portfolios have been widely recognised for their potential to encourage a reflective approach and to help them to identify areas for development: Coolin and Harley, 2010, Coolin et al, 2010a, 2010b, Gerbic, Lewis and Northover, 2009, Kaider et al, 2009, Rebbeck, 2010, Rowley and Dunbar-Hall 2009.

Thus reflection is seen by many as a way to help inform, internalise and so construct learning; it is considered to be a tool that can help transform as well as achieve better learning. Reflection is therefore an essential element of constructivism and it will provide a means by which work-based learners can draw together formal and informal learning to construct knowledge and make meaning as well as undergo personal transformation, in the context of learning.

These writers also recognise a need for a structure to enable deeper reflection. Some of them talk about reflection tools, one such tool is a learning journal.

Moon (2006, p19) writing about learning journals to support reflective practice posits that a “*constructivist view of learning is the model that best supports the idea of a good learning journal*” and states that reflective writing can help the learner to make sense of knowledge and experiences leading to “*transformative learning*” (Moon, 2006, p40). A learning journal provides a tool in which to record experiences and at a later date to reflect on them to identify learning that may have occurred between the original time and the point of reflection. Moon (2006) also recommends a structured format for journal writing through providing questions as prompts for learners, as an accompaniment to other learning (course content, research), profiles or proformas, and blogs or weblogs. She suggests a four phase format to support learning in short courses: current practice, new learning, relationships between these and resultant changed practice. Moon appears to see the learner as a sole participant in the learning process which, whilst supporting the notion of constructivism does not include the idea of the social construction of learning.

Views that consider a more collaborative approach to learning and the role of reflection include James and Pollard (2011, p293) who recognise the potential importance of an “*enacting dialogue*” built on communication between learners and others over a period of time through which learners can construct their own understandings. They quote Alexander’s (2004) principles for genuine dialogue as: “*collective, reciprocal, supportive, cumulative and purposeful*”. Lea (2004, p747) argues that “*there is ... increasing recognition that the construction of knowledge is a dialogic process*” and that learning journals allow students to see “*how their approach to a subject area has changed and developed over time*” (Lea, 2004, p750). These writers also see that there is a relationship between reflection, time and learning: the idea of *diachronic learning*.

Currant (2010) explores the concept of diachronic learning and the role of e-portfolios stating that recording and reflection on what is recorded need to take place over a period of time. He quotes Cambridge’s (2008) notion of an e-portfolio being a ‘*living document*’ and Bruner’s (1991) concept of ‘*narrative diachronicity*’. Bruner (1991, p6) presents this concept as an “*account of events occurring over time*” and the role of “*narrative accrual*” (Bruner, 1991, p18) whereby someone will “*cobble stories together to make them into a whole of some sort*”. Haigh and Higginson’s (2010) research supports this view and showed that “*the capability to build up a picture of learning over time gave*

students a sense of their own achievement and built confidence” (Haigh and Higginson, 2010, p6).

Bartlett-Bragg also supports the notion of diachronic learning stating that:

“the only real path is the one you see after walking across the desert when you look back and see your own footsteps.”

(Bartlett-Bragg, 2003, p9)

However, Clegg and Bufton (2008, p435) talk about “*retrospective meaning making*” where students both complete their plans and reflect some time after the event suggesting that this results in a false reflection and thus potentially incomplete recognition of any learning transformation that may have taken place.

I encourage my students, as well as myself, to keep notes of all sorts of events and episodes as they occur. It is only by making these contemporaneous notes that we can be sure we record, as accurately as possible, the actual facts, or at least our perspective of them at the time that they occurred. If we record them at a later date we will have a different perspective of what they were, or what we thought at the time; we will see them through a lens that is distorted by time and other events. If we record them when they occur and then look back on them in six months’ time we will be able to reflect accurately on any changes that have occurred between then and now; if we record them at a later date we run the risk of not recording a true picture because we will, in some way, have moved on in our learning and understanding and this will impact on the record that we make. We are likely therefore to see a smaller change than that which really occurred.

In a report that researched the impact of work-based learning, Nixon (2008, p 6) reported the importance of approaches based around reflection and noted that these brought benefits to the learners and the organisation in which they worked. Cox (2007, p471) also emphasises the role of reflection in learning through work. Ions (2009) found that an appropriately designed pedagogy and the manner in which it was put into practice influenced whether learners adopted a helpless response or mastery-oriented response and that a reflective approach supported the latter as it allows the learner to concentrate on self-improvement rather than a comparison between one’s own performance and that of others. The importance of the individual and the workplace in work-

based learning have been highlighted in earlier discussion, by adopting a reflective approach to the pedagogy I can enable the learner to seek this self-improvement by situating his learning in his individual context thus maximising the benefits to himself and his employer.

Goldhill's (2010) investigation into how reflective practice is taught in a work-based learning case study found that there were blockages to reflective practice at work and that distance learning can lead to feelings of isolation which impacted on reflection. However, she also identified positive aspects such as its role in making connections between prior and new learning and enabling students to think rather than simply learn facts. Where collaborative activities were used these could provide support through friendships that developed although negative feedback from adult peers often had a detrimental impact. Her paper recommends the use of introductory workshops to build students' reflective abilities. My pedagogy can provide a scaffold that will develop reflective abilities as well as a supportive environment to minimise the potential for and impact of negative feedback.

Smith, Clegg, Lawrence and Todd's (2007, p132) view of reflection concluded that:

“the pedagogical benefits of work-based experiences depend largely on the extent to which students reflect on them and the extent to which they take understandings derived ... and relate (them) to work.”

Rumbelow (2009), in support of this view, proposes that all work-based assessment should include a reflective element as this will allow the assessor to check that the student has in fact 'learnt' and been able to internalise that learning. Boud (2001) proposes using journal writing to enhance reflective practice but warns against its use in assessment; he argues that a clear separation is need between reflection and assessment.

Where learners are invited, or expected, to keep learning journals or in some way record their reflections, consideration needs to be given to how private those reflections will be. If the comments will be seen by others, and depending on who those others are (e.g. assessors, employers, peers, tutors) the learners may be reticent in expressing their true reflections and may write what they want the audience to see, or maybe write an expurgated version to provide a

protection and avoid vulnerability (Moon, 2006). Raelin (cited in Gray, 2001, p323) refers to this a public versus private reflection. Within an e-portfolio based pedagogy it is possible to create a range of records of reflection and to limit who is able to see those records: author only, author plus tutor, author plus peers. A learner can also choose to set a time limit for others to view his work and whether or not others can comment on the work. Thus learners can benefit from complete privacy, if they want it, or collaboration and discussion. In separating types of reflection in this way it is possible to include reflection as part of assessment and for the learner to use a reflective element to show what has been learnt.

It is my contention that a well-designed e-portfolio based pedagogy will provide a learning environment that enables the reflective practice that supports learning, as recognised by the wide range of authors presented in this section. Learners can make and keep contemporaneous records of events, activities, thoughts and ideas; in the future learners can note their reflections on each of those records, and each entry that they make into the e-portfolio is ‘date-stamped’ to provide a chronological history of each input. Learners will be able to identify how their knowledge has developed over time, what episodes have contributed to that knowledge, and to present the consequential learning that has occurred with reference to relevant evidence. Learners can also choose who to share their reflections with and can thus choose the audience and tailor their writings to that audience. Each learner can record episodes that only they see, ones that they share with their tutors, others that they share with their peers. They can keep a record of discussions that they have over time and reflect on how those discussions have informed and helped change their understandings. Tools within the e-portfolio can be used to help structure learners’ record-keeping and to encourage them towards deeper approaches to reflection; *“the tools provide a structure that nudges the user to move beyond simple description of events and activities to a deeper level of analysis or forward projection.”* (Sutherland, Brotchie and Chesney, 2011, p24).

Within this section I have looked at three key concepts for an e-portfolio-based pedagogy. I have briefly explained a constructivist approach to learning whereby individuals generate their own meanings and understandings and the role of others in mitigating this meaning-making through social interaction; I have explained the principles of scaffolding learning within the context of work-based

learners as well as look at the concept of scaffolding outside the curricula. In the final part of this section I have shown why reflection is an important element of learning and outlined, in principle, how an e-portfolio can be used to provide structure and support to reflection by work-based learners.

In the following section I will briefly explain what an e-portfolio is and how it can be used to scaffold learning within a constructivist framework as well as to provide opportunities for reflection. I will also consider how online learning, opportunities for reflection and an online community or network can be created through the use of a series of blogs located within an e-portfolio.

5 e-Portfolios

In simple terms an e-portfolio provides an electronic space in which to record and store thoughts, memories, experiences and later reflect on them and bring relevant records together to evidence learning. The definition given by Pebble Learning, who develop the e-portfolio used at Wolverhampton, is:

“A system which allows users, in any of their learning identities, to selectively record any abilities, events, plans or thoughts that are personally significant; it allows these records to be linked, augmented or evidenced by other data sources and allows the user to integrate institutional data with their personal data. It facilitates self-awareness, promotes reflection, supports enrichment through commentary and feedback from the recipients of shared assets. It grows, develops and matures as the user accesses it, without constraint, over time. It provides tools for aggregating assets in multiple forms; for telling myriad stories to diverse audiences and ensures absolute user-control over what is shared, with whom, for what purpose and for how long. It is a personal repository; a personal journal; a feedback and collaboration system; and a digital theatre - where the audience is by invitation only.”

(Pebble Learning in JISCinfoNet, 2009)

Alternative definitions provided by Butler (2006, p2) and Gomez (2004) (both cited in Duffy, Anthony and Vickers, 2008, p24) also recognise that e-portfolios are used to gather a range of evidence selected by a learner and can be presented to a range of audiences to explain a learning journey. Students, over time, recognise the learning potential provided by an e-portfolio approach but an initial challenge of becoming confident with the technology needs to be addressed (Gerbic, Lewis and Northover, 2009).

In research into the use of e-portfolios with nursing students (Endacott et al, 2004, pp251-253 cited in Duffy, Anthony and Vickers, 2008, p28) four models

were identified: the shopping trolley (use as a storage vehicle); a toast rack (consisting of discrete elements); spiral column (supporting critical competencies and reflection); cake mix (where evidence from theory and practice were integrated). Cambridge (2010, p61) states that *“as a whole, an e-portfolio can integrate the diverse elements of identity needed to present a theory, story, or map that explains the coherence of the whole”*.

Paper-based portfolios can be used to record and reflect on a range of evidence but e-portfolios access the evidence in a more dynamic way by allowing hyperlinks to resources such as images, thoughts, presentations, spreadsheets and discussions (Curwin, Powell, Schmidt and Staley, 2010). Some e-portfolio software also provides a range of wizards and templates that allow the student to evidence their learning in different ways e.g. through a webfolio, a profile, a blog or activity logs. The software used at UoW, PebblePad, is considered by its developers to support learning because it *“has a reflective structure, supports individual and social constructivism and is essentially dialogic in nature”* (Sutherland, Brotchie and Chesney, 2011, p6). However, they also recognise its limitations in that it is a tool and its effectiveness in use depends on how it is used.

Cambridge (2010, pp12 and 19) presents two generic types of e-portfolio: standardised and personalised. The standardised e-portfolio (portfolio as test) allows for easier grading for assessment purposes whereas the personalised version (portfolio as story) ensures authenticity. Cambridge considers that both types of e-portfolio can have a place in a learner’s journey. In support of a standardised e-portfolio approach, Haigh and Higginson’s (2010) findings on their investigation into the use of e-portfolios with undergraduate midwifery students identified benefits provided through the ability of an e-portfolio to provide templates to guide thinking. Furthermore students were able to collaborate by sharing their work with others in a restricted and private way as well as to seek confidential feedback from their peers and tutors. The need for varying levels of privacy were shown in the previous section to be essential for learners to be more honest in their reflections and this should enable better knowledge, understanding and learning.

These writers all present the benefits of an e-portfolio as a means of recording lifelong and life-wide learning experiences and argue that although different models exist, in principle they achieve the same aim (i.e. to provide a learning

environment that can be personalised by an individual and be used to present evidence of learning).

Cambridge's argument that there is a place for both a standardised and a personalised portfolio is one that I can apply in my project. I can see the potential for a standardised e-portfolio as a scaffold to assist the learner in beginning to draw together evidence, presented through a structured and guided narrative. As a learner gains confidence, in both the use of the tool and the learning associated with writing a learning narrative, the transition to a personalised version can begin. Such an approach is likely to overcome potential issues of transition into higher education, the use of technology and becoming on-line learners that were identified in earlier sections of this chapter. In addition, a standardised approach could have benefits for tutors who are also new to this learning environment as it will allow them to better support their learners whilst the learners and themselves gain in confidence and competence and move towards more personalisation. Quality assurance will be more easily achievable where there is commonality in use and presentation. Whilst I recognise that this should not be leading or restricting the pedagogic design it is a relevant constituent and cannot be ignored.

An e-portfolio provides a technology that will allow learners to record and report their learning but I also argue that, in order for it to be most effective, it also needs to be part of the pedagogy and considered as an integral part of the pedagogic design, as evidenced by the following research findings. Gerbic, Lewis and Northover (2009, p327) argue that "*e-portfolios are both a technology and a pedagogy*" and have the potential to be a transformational technology whilst Owen (2009, p729) argues that whilst e-portfolios encourage lifelong learning tendencies they take time to embed (Owen, 2009, p733) and that to be effective "*e-portfolio initiatives must address pedagogical as well as technological, economical, societal and political objectives*" (Owen, 2009, p733). Similarly, Coolin et al (2010a) recommend that to be most effective e-portfolios should be embedded in the pedagogic design from the outset. In support of these writers, Becta (2007, p5) research found that "*e-portfolios benefit learning most effectively when considered as part of a joined-up teaching and learning approach*" and Joyes, Gray and Hartnell-Young (2009, p488) that e-portfolios provide an opportunity to draw formal and informal learning together but the purpose behind, and the use of, the e-portfolio must be "*aligned to the purpose*

and the context". These views are echoed by Duffy et al (2008) who also recognise that e-portfolios can be used to transform the learner and that *"constructing portfolios give students a broader sense of what they are learning and how that learning takes place"* (Duffy et al, 2008, p27). Brooks (2007, cited in Duffy et al 2008) noted *"a significant change in motivation and self-efficacy due to task analysis"* when portfolios were used with adult learners.

In this section I have shown that an e-portfolio is an appropriate tool to support lifelong learning into which learners can record and evidence episodes from their life-wide activities and formal and informal experiences (Sutherland et al, 2011, p29). Cambridge (2010, p105) looks at the e-portfolio as a *"symphonic representation of self"* which, he says is essential for lifelong learning and personal development. But if an e-portfolio is to be used throughout a learner's life it needs to be capable of moving with the learner in and out of the different stages of that life. Hence it needs to be able to transfer between systems (e.g. in different colleges, universities, employers) as well as be updatable within a system. Leap2A compliant systems will allow such transfer within and across different software. [Leap2A *"is an open specification for transferring learner-owned information between different systems"* JISC (2010b)]. One of the considerations for my pedagogy is that it can be used for lifelong learning, for work-based learners to use throughout their learning journeys and as they move in, and out, of formal learning experiences. In choosing an application that is Leap2A compliant I will ensure, as far as possible, that the learner can have continual access to their learning. One of the reasons for not choosing the University's VLE as a suitable learning environment is that access is restricted to the time that a learner is registered to study. Once the study is completed or the learner leaves the university she can no longer access that element of learning and it cannot be transferred into another system because it belongs to the university rather than the learner. With the e-portfolio all the content remains accessible to the learner.

The evidence presented in this section supports the concept of an e-portfolio based pedagogy, its use in structuring learning, in supporting learners, in recording a range of experiences (within and outside curricula), in enabling reflection and as a tool throughout lifelong learning. The need to build the e-portfolio within the pedagogy from the outset is also highlighted. In the

following section I will look at one particular tool within the e-portfolio that can be used to create affordances to enable our work-based learners, blogs.

5.1 Blogs

In an earlier section I discussed models for on-line learning and reported research by Garrison, Anderson and Archer (2000 and 2011) that recognised three interdependent domains, social presence, teaching presence and cognitive presence (Figure 3.3), for computer-mediated communication and to enable collaborative activity and group discussions. Lowe (2004 in O'Donnell, 2006, p10) mirrored Garrison et al's work by identifying three blog modes: personal, knowledge management and community/social and posited that "*where blogging truly comes into its own is when it is able to integrate all three modes into a coherent whole*". The e-portfolio we use at Wolverhampton contains a series of wizards, templates and other tools to support and scaffold learning, one of which is the facility to create a blog (derived from the term 'web log' i.e. a log on the internet, or web). A blog is easy to create and use and offers the potential affordances I am looking for to enable access to learning as well as the opportunity to create the interdependent domains recognised by these authors that are necessary constituents of on-line communities. In this section I will present the theory that supports the use of blogs as an integral element of my pedagogy.

A 'blog' has been described as "*an on-line personal journal*" (Ferdig and Trammell, 2004, p1) and "*personal publishing*" (O'Donnell, 2006, p8) that "*makes material accessible for subsequent reflection and analysis, allowing students to revisit and revise their artefacts; thus enriching the learning experience*" (Ferdig and Trammel, 2004, p2). Furthermore, a published blog can elicit responses from readers which can provide feedback that supports learners in constructing their knowledge. It can also include hyperlinks to other relevant information, data, knowledge etc which "*help students begin to understand the relational and contextual basis of knowledge, knowledge construction and meaning making*" (Ferdig and Trammel, 2004, p2), which fits their use and application within a constructivist pedagogy.

The majority of the research into the use of blogs in educational contexts is based on a traditional understanding of a blog, where the blog is published (made accessible to others) for viewing and comment by an open audience (public blog) or a selected group (a course blog). Writers such as Barlett-Bragg

(2003), Boud (2001), Drexler, Dawson and Ferdig (2006), Windham (2007) and Wolf (2010) have investigated the use of blogs as a learning environment and/or to support learning. In these contexts blogs are regarded as effective (constructivist) tools to encourage a deeper approach to learning, to develop critical thinking skills and for collaborative learning.

Pauest (2003 in Bartlett-Bragg, 2003, p2) identifies five features of a blog: personal editorships, hyperlinked posting structure, frequent updates, free public access to content, archived postings. O'Donnell (2004, p16) suggests that if students maintained a blog throughout their studies it would evolve with them and record both learning and practical experiences. Crowe and Tonkin (2006) recommend the use of blogging for learning and assessment and suggest that collaborative blogs can "*allow students to experiment with different voices and tones of writing*" (Crowe and Tonkin, 2006, p26) but that where they are used as a reflective journal then access should be restricted to an individual student and the teacher. Williams and Jacobs (2004, p249) report that the asynchronous nature of blogs provides a space for more personal reflection and, like other writers, make reference to the potential for transformational learning that this technology can offer. Davi, Frydenberg and Gulati (2007) also recognise the collaborative potential of a blog through the creation of a forum for communication and conversation.

These examples show how the introduction of blogs for different purposes, such as the three domains I have previously identified, will allow my learners to separate the public and private aspects of their activities and, in particular, their reflection. They also offer the potential to share aspects of the learning with others to encourage social interaction and collaboration. Thus blogs, which are already available, within the e-portfolio software can provide a teaching and learning environment and a space for collaboration as well as a potential opportunity to maintain a personal learning diary.

My earlier discussion on scaffolding learning confirms that the use of the blogs needs to be structured and organised, certainly in the initial interactions by both learners and tutors as they are new to the technology and the pedagogy. Rourke and Coleman (2009) agree with this supposition; in their research they found that for effective on-line collaborative learning to take place the virtual environment needs to support the formation of an evolving community of practice and the establishment of clear roles for both instructors and learners;

scaffolding needs to be provided to support and co-ordinate the learning process.

Although blogs have the potential to provide a suitable learning environment there are potential pitfalls. Meishar-Tal and Gorsky (2010) used a wiki for collaborative activities in a distance learning course. Wikis can be added to and edited by contributors and the purpose behind their introduction, by these two researchers, was to support students in co-constructing their learning. However, their research found that students were more likely to add content than edit or delete existing content and the end result was more like a threaded discussion, such as would emerge in a group blog, than the intended integrated and unified output. The authors also found that a minority of students dominated the posts within the wiki. Although these students did not use the wiki as intended they did create an archive that presented a chronological development of their knowledge construction and development. This ability to record a timeline of thoughts, ideas and reflections is relevant to my pedagogy because it provides the diachronic evidence that my learners can use to show what they have learnt and how they have been transformed over a given period of time and of study. My learners can make use of a series of blogs to achieve such a timeline. The issue of some students dominating is commonplace for all modes of study, virtual, face-to-face and blended; tutors will need to be prepared for this and be encouraged to make use of standard questioning techniques to draw in non-contributors and discourage dominant ones.

The use of blogs to create the three domains of teaching presence, cognitive presence and social presence allows learners to (automatically) create an individual record of each blog post within their individual electronic space on the server. Learners can look back and reflect on each individual record as well as create hyperlinks to a record from new input into the e-portfolio. Learners are able to present a learning journey through a reflective narrative that contains links to individual pieces of evidence contained within their e-portfolio. The learning journey can be presented for assessment and grading to show achievement of learning outcomes, normally required for HE credits and awards. In the following section I look at an approach to assessment of learning for my e-portfolio based pedagogy.

6 Assessment

In my pedagogy, learners will study 5-credit units that they will need to ‘pass’ and they will have to draw their learning from the individual units together into a summatively assessed 20-credit module. In looking at how I could achieve this effectively I considered the use of a Patchwork Text approach because, in simplified terms, this allows a learner to combine a range of learning experiences into an holistic view.

Patchwork texts are based on the constructivist approach to learning where a learner constructs meaning, rather than accumulates information and is defined as:

“a selection from a collection of writings presented within an interpretive reflective framework which brings out and explores the overall theme in relation to the individual pieces of writing”

(Scoggins and Winter, 1999, p488)

Patchwork texts are a learning and assessment methodology introduced to balance the polarities between a traditional end of unit assessment against the portfolio-type approach where learning accumulates over a period of time (Scoggins and Winter, 1999). They were developed because it was thought that *“a more reflexive, synthetic, cumulative and open-ended assessment would lead to better learning”* (Smith and Winter, 2003, p161).

Early work with this methodology introduced short regular writing tasks (patches), spread through a course of study, that were peer and tutor reviewed and subsequently redeveloped by the learner. A series of such patches, on a wide range of aspects of a curriculum and in different writing genres were accumulated during the course and a final summative assessment undertaken which consisted of a reflective narrative written to draw the learning together (stitching the patches into a patchwork). Students can usually select which aspects and which patches to stitch together into their final submission (Winter, 2003). Normally the final task is considered less daunting because the individual patches, on which it is based, have been accumulated over a period of time and have received formative feedback during this process.

Crow, Smith and Jones (2005) found that the introduction of patchwork texts for inter-professional learning in health and social care enabled a move from a didactic approach to teaching content to more autonomous peer-support

learning and gave students space and peer support so that they could “*construct their own learning and develop the skills of self-criticality*” (Crow et al, 2005, p127).

Dalrymple and Smith (2008) used patchwork texts as a tool to ease transition into higher education where student teachers had to complete a minimum of six out of a possible ten patches plus a final integrating summary. They found that the approach appeared to ease transition into HE culture and developed students’ understanding of, and capacity for, reflective practice. However tutors needed to provide an extensive amount of formative feedback.

Maisch (2003) recommends the use of patchwork texts as a learning and assessment method for masters’ courses, within an e-portfolio environment, as it allows learners, particularly those in professional roles, to draw on a series of small projects rather than one large project, which better represents and allows for the changing nature of their role over their period of study. McKenzie (2003) suggests that patchwork text is an alternative term for a portfolio and chose to use this latter term when redesigning a module as it was one that her colleagues, and the external examiner, understood. However Rees and Preston (2003, p132) warn that patchwork text could:

“fall into prescriptiveness or mere ‘portfolio’ activity if the complex relationship between ‘process’ (i.e. teaching delivery and peer critique) and ‘product’ (the finished patchwork assignment) is not coherent”.

These same authors also warn that a patchwork text is “*not a panacea for all assessment issues*” and that its success depends on the interactions between learners and between learner and lecturer as well as the expectations and actions of the module delivery team.

Akister et al (2003) introduced patchwork texts for a range of reasons including: to help students develop self-critical thinking, be able to support one another, to encourage collaborative learning, for students to be able to build up assignment material during the course and to receive feedback on it, to allow students to find a voice, [I would add here finding **their own** voice], to reflect on learning and relate it to previous experiences and to empower students through greater ownership of their learning. The writers note that the method requires the tutor to devolve some responsibility and control and that its introduction and maintenance requires careful planning.

Quinn (2003) presents a personal reflection of her own learning journey through a series of patchwork texts recording her experiences along the way. This paper shows the potential impact of a patchwork text approach on an individual, it also shows the concept of diachronic learning in which the reflections at different points in time along the journey contribute to her construction of meaning which, I have argued, is an essential element of my proposed pedagogy.

A patchwork text methodology for learning and assessment has been adopted by other work-based learning courses. Davies (2009) reported on a recently validated course in which students undertook four 5-credit units of study and were assessed in 20-credit blocks (a similar model to the one I was developing in my project). Learning in the 5-credit units was assessed formatively; in the 20-credit block was summative. In the summative assessment learners were *“expected to actively draw together and ‘construct’ an account of the ideas under consideration”* (Davies, 2009, p86).

More recent work using patchwork texts has suggested a move away from the term ‘texts’ to better reflect the multiple types of media that can now be incorporated e.g. video and audio clips, photographs, cartoons, mind-mapping. Using technology as a medium for the learning means that sharing and feedback with peers and tutors is usually easier (Marcangelo, 2011).

All these writers provide evidence that supports the use of a patchwork text methodology for assessment within my proposed pedagogy:

- learning is accumulating over time, both within and before the unit of study
- learners can write shorter narratives at the end of each unit that can build into a longer narrative for the 20-credit module
- the social aspect of collaborative learning can be incorporated through peer and tutor feedback and discussion
- the transition of my learners into HE culture can be eased and their reflective practice can be gradually developed
- learners can combine a range of study units and experiences into their assessment that reflects their individual and changing roles
- learners receive feedback that can inform their reflection and their subsequent learning
- learners will be supported in developing self-critical thinking

- assignment material is being built up throughout the course
- learners can find their own voice and will be able to relate learning to their own experiences and understandings
- the diachronic nature of learning is supported through this approach as it allows learners to reflect on their learning journey along different timelines, for instance, within a unit and across a module
- learners can use a wide range of multi-media to evidence their learning.

Within my pedagogy the use of blogs means that the individual records created provide the evidence that can be built into the reflective narrative. A series of patches created in the 5-credit units can be combined into a summative assessment in the 20-credit module.

7 Conclusion

In this chapter I have provided a critical literature review that has established a number of issues that the research design needs to ensure can be identified and investigated as part of the development of my proposed e-portfolio based pedagogy for work-based learners. In Chapter 4 I will present my Research Methodology and show how the action research approach adopted will allow this investigation as part of the pedagogy's development.

Chapter 4 Methodology

1 Introduction

The purpose of this chapter is to explain the methodology used in the project work in order to achieve the project aim and objectives outlined in Chapter 1. I start with an overview of the methodological approach I have adopted and how I have applied this in my research. My methods for data collection, analysis and interpretation are given followed by an explanation of how I have triangulated and validated my findings. The final substantive section in this chapter covers issues of ethics and confidentiality and an explanation of my reflexive approach to the research work.

2 Action research

I have been involved in pedagogic design since I started work as a lecturer at the University of Wolverhampton in 1993. What I have learnt during my career as an academic is that any model developed needs refinement before it can be fully effective; it is through experimentation, reflection and adaptation that improvements can be identified and a more effective pedagogy emerge. Such an approach of experimentation and incremental change lends itself to action research (AR) rather than other methodologies. Cousin (2009, p149) states that AR provides an opportunity for research and development to be combined with reflective inquiry, for groups of academics (and others) to investigate issues together through a “*solution-centred approach*” and for the work to be conducted “*within everyday, natural contexts*” (Cousin, 2009, p150). The wide range of stakeholders that I want to involve in the development of the pedagogy can be included within AR through a participatory approach (see later in this chapter) and a series of research cycles can be used to gradually improve and refine the emerging pedagogy. Other research methodologies do not allow this developmental and progressive approach to pedagogic design.

In simple terms AR is a cyclical approach of planning, acting, observing and reflecting, implementing identified changes and moving onto a new cycle where the effect of those changes can be monitored. AR “*aims to make changes or improvements in a situation through a cycle or set of cycles of investigation, action and reflection*” (Costley, Elliott and Gibbs, 2010, p88).

But is AR simply a technical method, or is it a methodology? McNiff and Whitehead (2002, p40) identify three dominant models of action research: conceptual, abstract and reified along with two views, firstly that “*knowledge is a ‘given’, something to be acquired*” which would make AR a method; the other view is that “*knowledge is something which people generate for themselves as they work out their dilemmas and issues*” which would mean AR is a methodology. The latter view, i.e. that knowledge is generated, fits with an interpretivist approach to research and is the one that I have adopted, thus AR, for me, is a methodology. Interpretivism foregrounds the search for meaning (Shank, 2002), often within a constructivist framework, which is the perspective that I take. (See Chapter 3 re constructivism and this chapter, section 5, for my commentary on interpretivism).

Later in this chapter I explain my approach to meaning making (through my data analysis and interpretation). First, I provide an overview of AR and then the approach I adopted in this research.

2.1 Overview of literature on Action Research

Much of the early literature on AR is situated in curricula design within the compulsory education sector (i.e. pupils aged 5 - 16 years) and in adult education and there has a more recent interest in its applications in HE. Much of what has been written in the earlier literature, as well as more contemporary writings, can be applied to AR in its widest application and for pedagogic design, such as my research area, in post-compulsory education. It is particularly relevant for work-based research due to its reflexive nature and the continuity of practice and continual improvement required through the cycle of action required. I have also used this method in previous work I have undertaken to introduce and evaluate a technology based intervention in an undergraduate taught module (Felce, 2007b).

Carr and Kemmis (1986), McKernan (1996) and McNiff and Whitehead (2002) give chronologies of the developments in AR, primarily through the second half of the twentieth century although McKernan also draws a link with Aristotle’s supposition in Ethics (McKernan, 1996, p21) that the “*practical is also connected with the process rather than the end products of inquiry*” (emphasis in original). In this section I will identify the key theories that have been presented by these writers but for more detail reference should be made to the original publications. Figure 4.1 represents an outline of the chronology.



Figure 4.1 Chronology of key models in action research

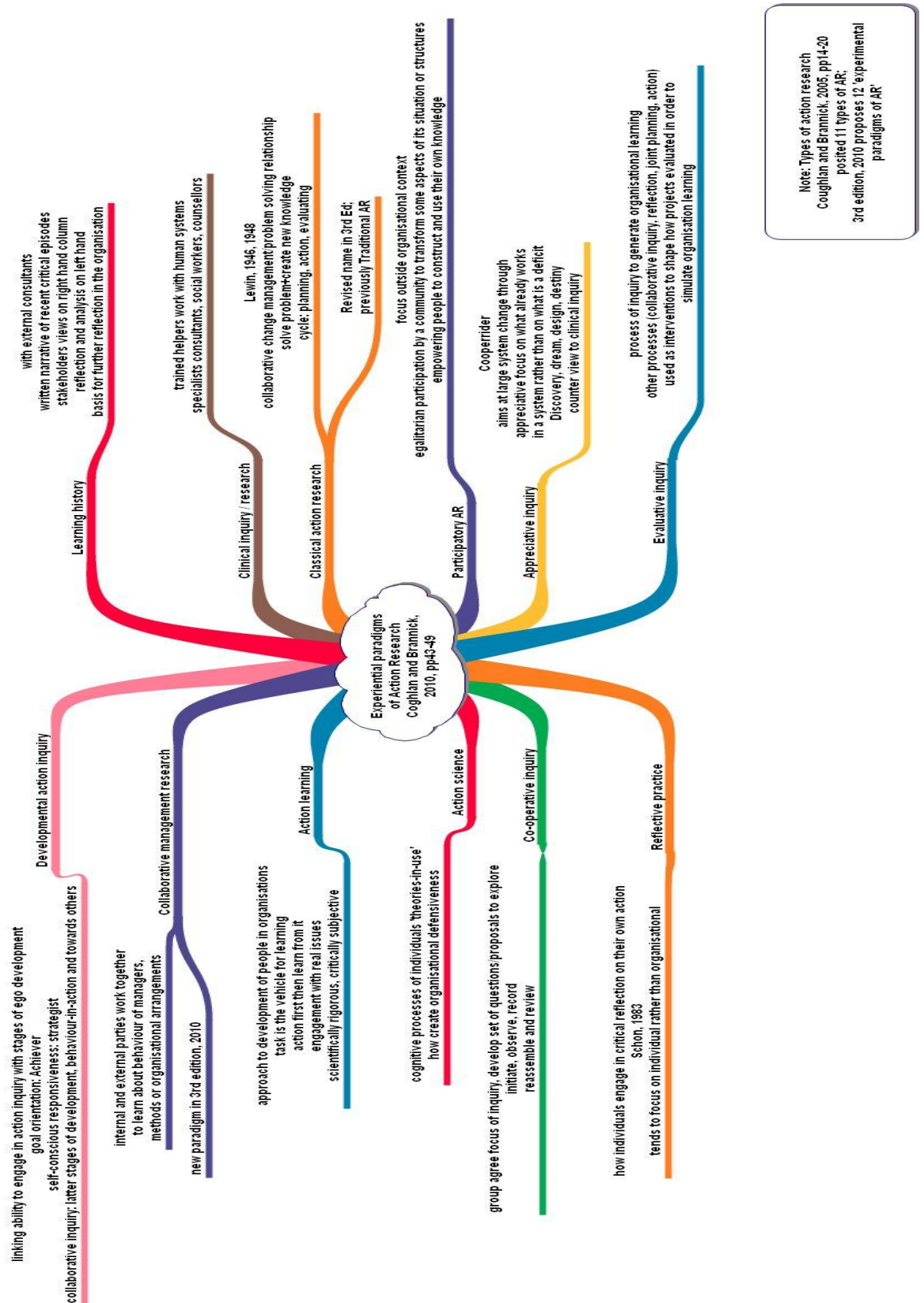
A number of writers recognise Lewin as the key initial proponent of AR since the Second World War (e.g. Cousin, 2009; McNiff and Whitehead, 2002; McKernan, 1996). Carr and Kemmis (1986) identify the development of AR in the following approaches: grand theorising, the foundations approach, educational theory, applied science/technical perspective/new practicality, the practical, teachers as researchers and the 'emerging critical tradition'. Furthermore, they go on to identify three types of AR (1986, p202): technical, practical and emancipatory. McKernan (1996) posits that there are three 'types' of AR: Type 1 he calls scientific AR, Type 2: practical-deliberative AR and Type 3: critical-emancipatory AR and he presents his new model "rational-interactive dynamic" AR. McNiff and Whitehead (2002) explain the developments through their three dominant models: conceptual, abstract and reified, starting with Collier and Lewin in the mid-twentieth century and presenting McNiff's model of AR (2002, p56) that is intended to represent the cycle in three dimensions, rather than the two dimensions she argues is represented in other models. Coghlan and Brannick (2010, pp43-49) identify 12 types of action research (summarised in Figure 4.2) including classic, participatory and reflective practice. Coghlan and Brannick's understanding of participatory action research (PAR) is that its focus is outside the organisation, involves a community and empowers "*people to construct and use their own knowledge*" (2010, p44). However, other authors see PAR as applying to any context: "*AR has to be participatory because the practice we are investigating is always in relation with other people*" (McNiff and Whitehead, 2002, p36)

Irrespective of the finer variations between the different models presented there are commonalities across all i.e.

- AR is cyclical,
- AR involves a reflective approach to research and
- the focus of the research is on a change intervention and each cycle will be concerned with a modification or review of that change.

Key stages in the AR cycles are: planning, acting, observing and reflecting which have much in common with theories of reflective practice (Biggs, 2003 - action learning; Cowan, 1999 - reflection for action; Kolb, 1984 - experiential learning; Gibbs, 1988 - learning by doing; and Schön, 1983 and 1987- the reflective practitioner). These commonalities add weight to an AR research approach for a work-based researcher, such as me. Tripp (2003) recognises the similarities with reflective practice and presents the AR cycle as a "*further development of*

reflective practice”; he also identifies the need for “*formal reconnaissance*” as the initial stage prior to commencing the first AR cycle (Figure 4.3). The reconnaissance stage is also recommended by Cousin (2009, p157). Elliott (1991, p73) also uses this term and proposes it is subdivided into two stages: “*describing the facts of the situation*” and “*explaining the facts of the situation*”. Coghlan and Brannick (2010, p8) refer to the need for a “*pre-step*” to determine “*context and purpose*”. In my research I have undertaken a very ‘light touch’ reconnaissance that I have chosen to refer to as an *audit* as this better reflects the nature of the work that I undertook.



Note: Types of action research
Coughlan and Brannick, 2005, pp14-20
posted 11 types of AR,
3rd edition, 2010 proposes 12 'experimental
paradigms of AR'

Figure 4.2 Experimental paradigms of action research (Coughlan and Brannick, 2010, pp43-49)

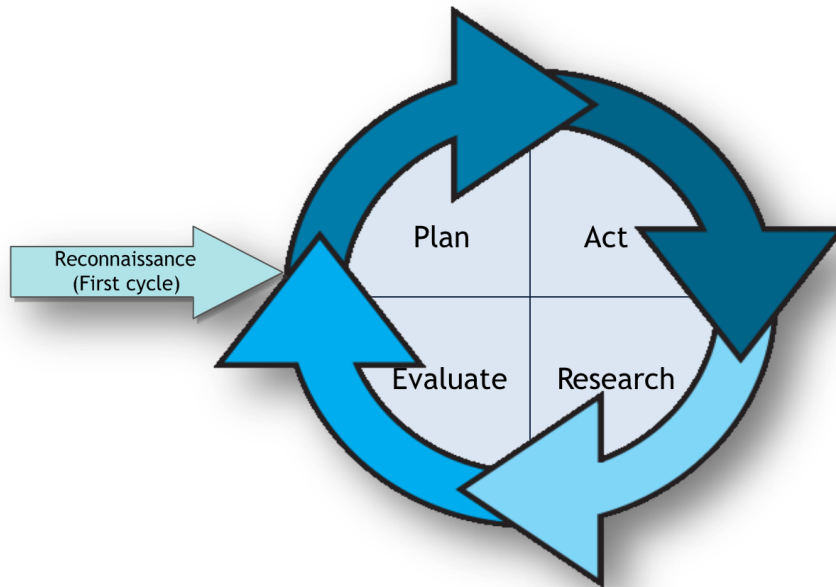


Figure 4.3 Tripp (2003) Action Research Cycle

In my reading about different approaches to AR I identified the potential for it to be emancipatory (Carr and Kemmis, 1986, p204 and Limerick (1991) in Zuber-Skerritt, 1992, p2), empowering (Carr and Kemmis, 1986, p205) and participatory (McNiff and Whitehead, 2002; Coghlan and Brannick, 2010). Cohen, Manion and Morrison (2011, p35) argue that AR is neither empowering nor emancipatory because educators hold no real power; power lies with the politicians. I disagree with these authors because their idea of ‘power’ needs to be contextualised and considered in the ‘micro’ environment (in my research, within the University) rather than the ‘macro’ environment (the wider political arena). In this ‘micro’ context the approach is both empowering and emancipatory.

In response to the idea that PAR allows research to be done “*with people... rather than to or for people*”, Cohen et al (2011, p37) contend that PAR is “*intensely more political than action research*” because it involves the “*community or workplace*”. This contention has validity and relevance. An effective and responsible worker-researcher will always actively involve colleagues in their research. For me, the primary difference between AR and PAR is that in the former the researcher is acting alone but in PAR they are a part of a team, although there is a “leader” all participants are equal and have a vital role in the research. In AR, although the researcher should take into account the whole context in which they are working, they can choose to place a

greater or lesser emphasis on different aspects, and determine a ‘solution’ that will work within his/her own contexts. Within PAR, there is likely to be a wider context with each participant having an equal ‘voice’ and a better understanding of their area of responsibility and thus better able to present an argument for, or against, a particular approach or view. PAR is likely to result in project outputs that all participants can agree to and that have been achieved through compromise and negotiation but this will depend on the relative power relationships within, and outside, the research group and on the leadership abilities of the principal investigator.

PAR requires people to work in collaboration. In other research I have undertaken, I found that “*success, or failure, of collaboration is due to a number of factors: mutual benefit, a change in product, process or output, stated, emergent and unstated aims, perceived benefits and mutual trust*” (Felce, 2011a, p63). Benefits and disbenefits of collaboration and collaborative research are also discussed by Costley, Elliott and Gibbs (2010). The research team for my project was wide and varied with representation across UoW schools and departments as well as employers and employees. This variety brought with it many benefits and challenges, some of which were related to the organisational “politics”, but the key benefit was the development of a pedagogy that was fit for its purpose, because of the involvement of the key stakeholders and the presence of the key factors required for a successful collaboration achieved through PAR. Although a PAR approach was used I recognise that, as the lead researcher / principal investigator, I am the participant who was probably the most interested in the AR and its outcomes. I address the potential impact of this on the research, and how I have dealt with it, later in this chapter.

3 Research design

McNiff and Whitehead (2010, p11-13), identify two design approaches for action research: a linear approach and one of developmental transformation. The first, linear, is where a specified series of “*action steps*” are followed until the answer is achieved and the project is finished, Workman’s (2007) doctoral research is an example of such an approach. The second approach i.e. developmental transformation, where “*new questions are addressed as they emerge through the process*” (McNiff and Whitehead 2010, p11) is the one that I have adopted in my research design. Each stage in the action research cycles

provided answers to some questions and raised new questions that I addressed in the subsequent activities. The project finished where an e-portfolio based pedagogy had been developed and could be reported on to the funding agency, however, the action research continues in the post-funded period through the further development of the pedagogy for new and emerging markets. These continuing developments are discussed in Chapter 8. In this section I present my overall plan; i.e. how I undertook this project. I will explain the key stages in the research as well as the participants and the reasoning behind their involvement.

The ePPSME project, which is the focus of this thesis, ran between April 2009 and March 2011. A timeline showing the key project activities is presented in Figure 4.4 ePPSME - Timeline. The timeline presents two clear aspects of the project: the project management timeline and the action research cycles of activity.

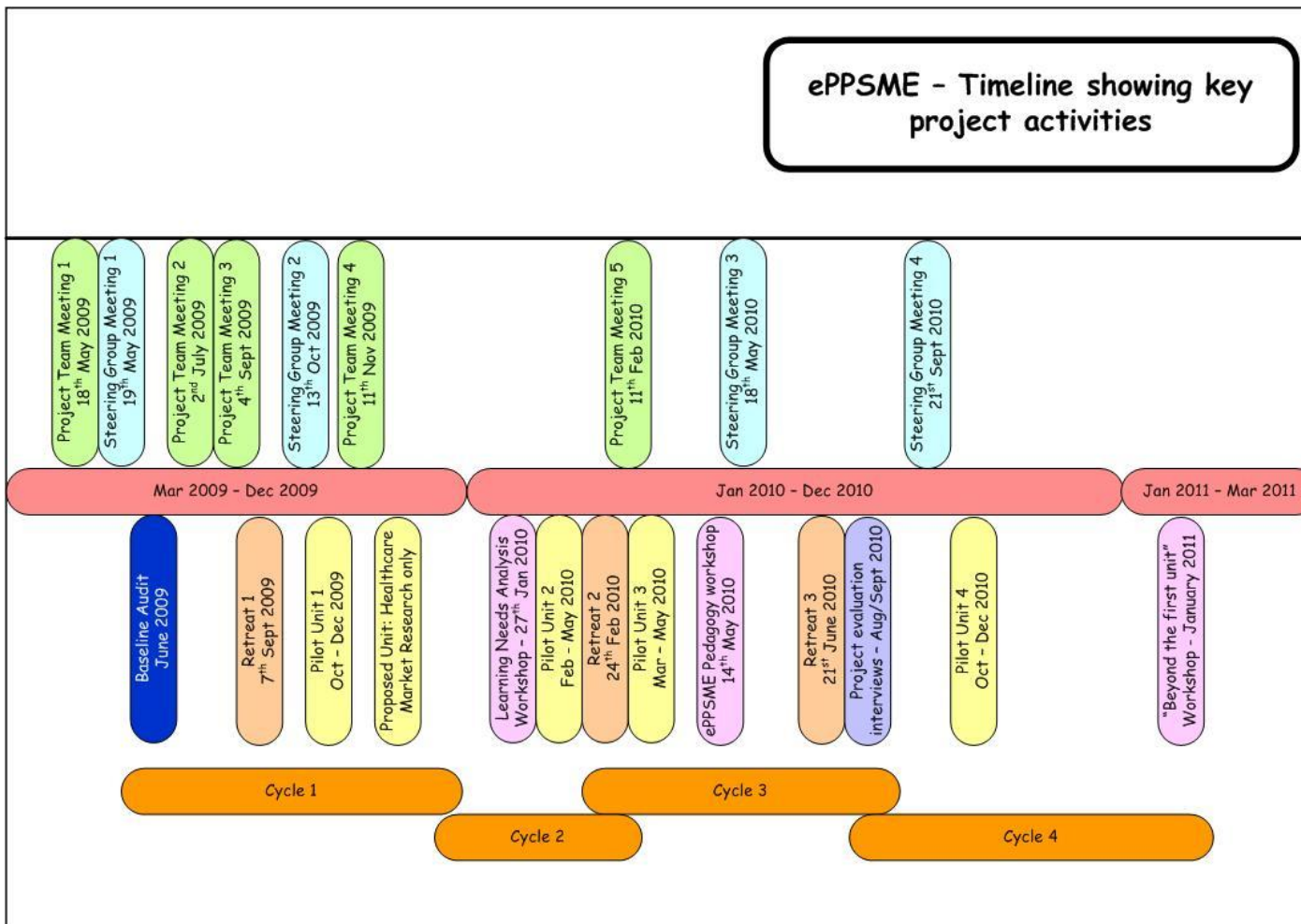


Figure 4.4 ePPSME - Timeline

3.1 Project management and participants

In my role as University Co-ordinator of Work-based Learning I contributed to the original concept for the bid proposal and the development of the successful submitted bid in which I was proposed as the Project Director/Manager. Once we received notification from JISC that our bid had been successful, it fell upon me to develop the project plan and assemble the key project participants.

One of my first activities as Project Director was to set out the management structure for the project. Within the management structure I wanted to capture the key stakeholder voices to ensure that any pedagogy proposed took into account the different perspectives involved in the tri-partite arrangements between the University, the employer and the work-based learners. Oversight of the project was through a Steering Group with the more detailed management through a Project Team (Figure 4.5).

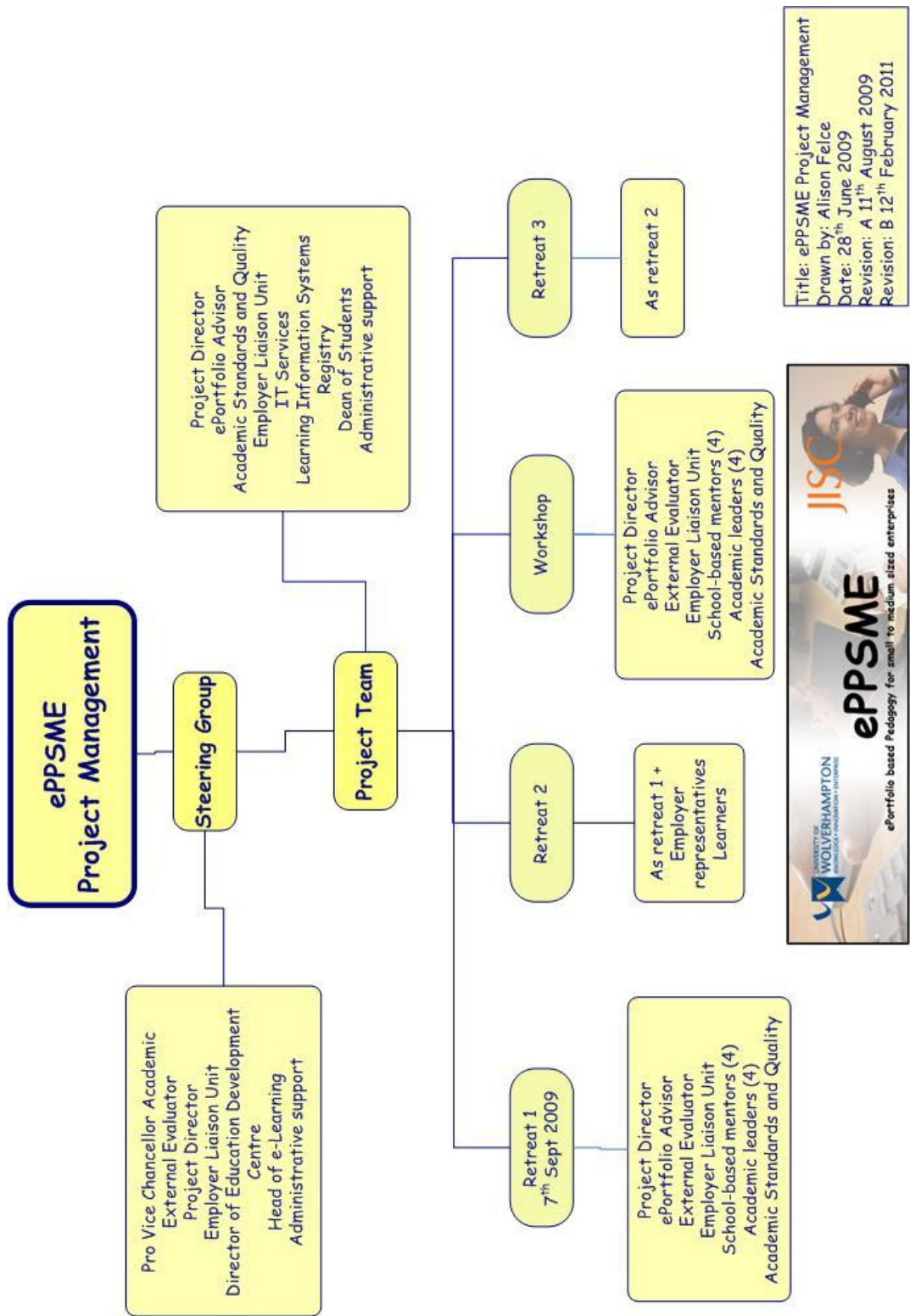


Figure 4.5 ePPSME - Management

3.1.1 Steering Group

The Steering Group was chaired by the Pro-Vice Chancellor (Academic) (PVC-A) who had responsibility for pedagogic and curricula developments within the University. I presented my proposed membership and Terms of Reference for the group which were accepted and agreed at the first meeting (Figure 4.6).

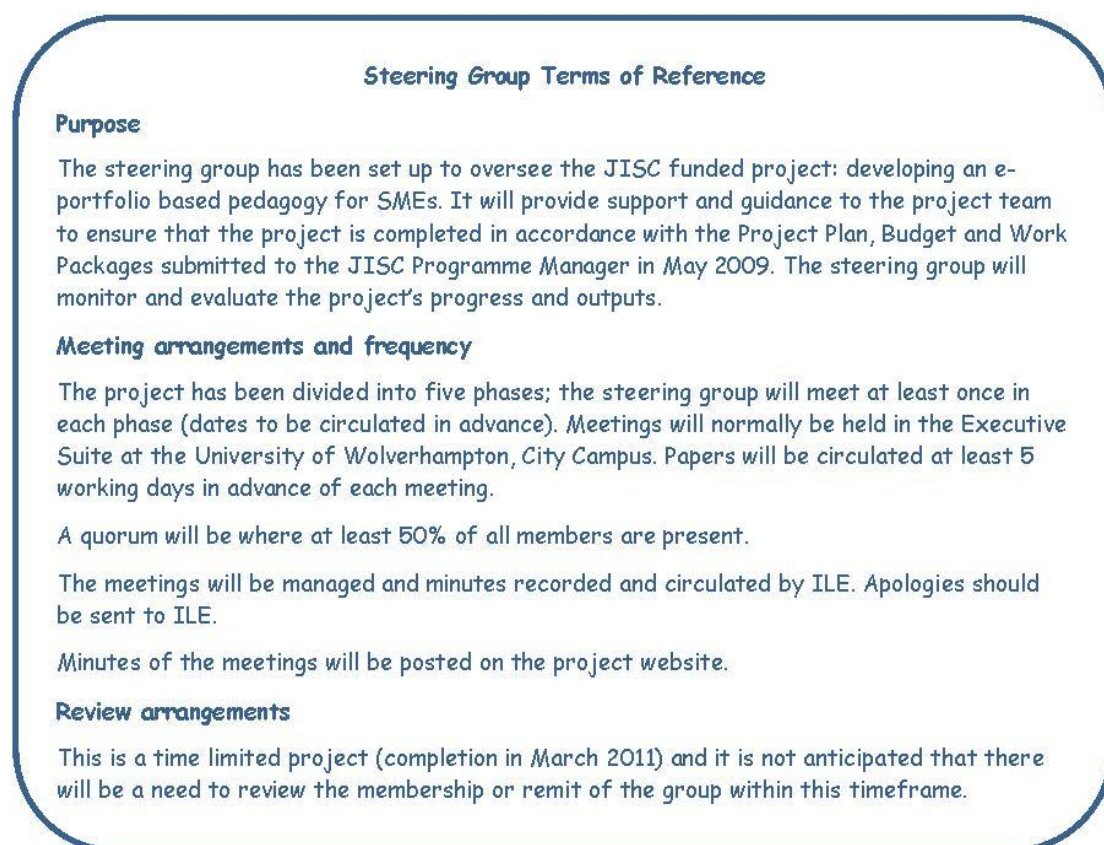


Figure 4.6 Steering Group Terms of Reference

In addition to the PVC-A and me, membership consisted of ILE Director (Vice Chair and renowned pedagogic expert), the Head of Blended Learning (responsible for eLearning development across the University), the project's external consultant (responsible for independent project evaluation), the chief executive officer of the CPPD company (who would undertake the market research to inform curricula design), an employer representative and administrative support.

3.1.2 Project Team

Whereas the Steering Group was set up to oversee the project and to ensure the bid objectives were achieved, the purpose of the Project Team was to engage a wider range of stakeholders in the more detailed work needed to develop the proposed pedagogy. As Project Director I took the role as Chair of this group and invited representation onto the group consisting an e-portfolio advisor (expert in the use of e-portfolio at the University), the deputy head of the quality management department (academic standards and quality), the curricula support officer from IT services, the head of blended learning, an employer representative, a learner representative, CPPD company representative and administrative support.

3.1.3 Sub-group meetings

The formal project management was achieved through the Steering Group and Project Team however much of the detailed work was undertaken in a number of formal and informal meetings between the e-portfolio advisor, academic leaders and school-based mentors. I also attended the majority of these sub-group meetings. The purpose of these roles is explained below.

3.1.4 Other key participants

Academic leader or the unit tutor - a subject specialist who would be responsible for developing the learning, teaching and assessment for each pilot unit created to meet the needs identified in the market research. The unit tutors were selected as they had subject expertise in our proposed pilot curricula areas and were known to be committed to seeking excellence in their learners' educational experiences.

School-based mentor, or e-mentor - a practitioner in the use of e-portfolios within the subject area relevant to each pilot unit. The school-based mentor's primary role was to support the academic leader in understanding and using the software application. If the pedagogic model we were developing was successful the academic leader could, in future, also act as mentor to others and thus help build capacity across the University. The e-mentors were chosen because they had recently been involved in the University's HEA Pathfinder project and had been responsible for the design and development of a 15-credit HE level 4 module delivered to full-time undergraduate students using the e-portfolio software and so they were familiar with the potential pedagogic applications of the technology.

Work-based learners and their employers - participants in each pilot unit who would undertake the course of study and provide regular formal and informal feedback that could be used to inform the next research cycle and confirm if identified learning and organisation's performance needs had been met.

3.2 Project planning

The Steering Group was responsible for oversight of the project and the Project Team for the achievement of the deliverables and outputs. At the start of the project I developed the project bid into a written plan (Appendix 3), to a template provided by JISC, with a detailed work packages breakdown showing key milestone dates and interim deadlines (Appendix 4). The documents submitted to JISC and my doctoral research design were co-developed to meet the different audiences for which they were intended.

3.3 Action research cycles, retreats and workshops

In order to develop the proposed pedagogy I instigated a series of AR cycles, each of which consisted of the design, delivery and evaluation of a 5-credit HE unit of learning. The units were designed in response to learning needs identified through market research and performance needs analysis with SME employers within the UK West Midlands. The AR cycles were preceded by the pre-step stage, an audit of current practice, and were interspersed with, and supported through, a series of design retreats (one-day events) and workshops (half-day events) where the project participants met to discuss progress and share feedback and emerging findings (Figure 4.4).

3.3.1 Pre-step stage: audit

The audit phase involved secondary research through a desk study, an emailed questionnaire to academics in the UoW with selected follow-up interviews to establish current practice and use of e-portfolios with learners in the workplace. The purpose of the audit was to establish current best practice and to identify academics who could be invited to take part in the AR cycles.

3.3.2 AR Cycles

In the research design stage, because I was adopting a developmental transformational approach, I did not know how many AR cycles would need to be completed to achieve the intended project outcomes. Based on the timeframe in which the project had to be completed and the monies available for the project (to meet JISC funding constraints), and to cover a range of University subject

specialisms, I identified five subject areas and invited representatives from these areas to undertake the roles of Academic leader and school-based mentor for each pilot unit (5 HE credits).

3.3.3 Retreats and workshops

Dates for three design retreats were set early in the project and these were supplemented by additional workshops to support the AR cycles. The first retreat was to launch the project, set the parameters for the research and agree participants' roles in the research. The second retreat brought the participants together to share on-going experiences and inform subsequent AR cycles. The final retreat was to allow participants to share their final evaluation and reflection on the project and the outcomes.

The workshops were not part of the original research design but were introduced to the project where specific needs were identified. The first workshop (Learning Needs Analysis) centred on curricula design and validation as well as the systems and processes being developed as part of the research. The second workshop (ePPSME pedagogy) shared understandings of the evolving e-portfolio-based pedagogy, whilst the third ("Beyond the first unit") looked at future potential enhancements to the pedagogic design developed in the research.

3.4 Evaluation

In line with the AR approach the evaluation activities were continuous throughout the project and involved a range of approaches.

As part of the JISC funded activity an external consultant was contracted to advise the Steering Group and Project Team, to obtain feedback from participants and to report at key stages in the project: after each Design Retreat, on the emerging and final project outputs and on the final report submitted to JISC in March 2011.

Formal evaluation was built into the units through on-line mid-unit and end of unit evaluation questions and semi-structured interviews conducted towards the end of the project. Questions in the mid-unit and end of unit evaluations (Appendix 5) were designed to inform the pedagogic design as well as the curriculum content within each unit. Responses to mid-unit evaluations would allow us to make minor changes in the remaining weeks whilst end of unit evaluation could be implemented in future iterations and in the other pilot units. The end of project interview questions (Appendix 6) were designed to

provide an overview of the different stakeholders experiences of the units and, where relevant, the project and the research methodology adopted. Questions were asked about learners' experiences before starting the units as well as during their study on the unit. The interviewees, and the associated questions, covered the range of stakeholders involved in the project including learners who completed the units, learners who did not complete, employers from the learners' organisations, University support staff and tutors and mentors.

Informal evaluation was collected from emails, records of telephone conversations and from commentary submitted through the participants' e-portfolios.

A report-and-respond survey approach was used to evaluate the key principles for an e-portfolio based pedagogy for work-based learners developed as a key output from the JISC funded project (see section 5.3 in this chapter).

4 Data collection

AR is a collaborative activity which provides a range of opportunities and possibilities to collect naturally arising data. In this section I outline the data collected throughout the project and present this in Table 4.1. Column 1 in the table list the action research stage, sources of data collected in each stage are listed in column 2 and the participants involved in the collection, analysis and interpretation of the data are given in column 3.

Winter (1989, p22) considers that the "*creation of a variety of data is important for small-scale research*" to help with triangulation of the results. In my data collection I have become a *bricoleur*, where I have made use of "*numerous tools to complete a task*" (Kincheloe, 2004, p64). I gathered most of my data through a multi-modal mixture of observational data, including noting of live and virtual conversations, evaluation questionnaires and through documentary analysis. A large proportion of my data was either available electronically, through documentation and commentary within the learner e-portfolios, or was saved in an electronic format e.g. my project learning diary, records of conversations, minutes of meetings, transcripts of interviews etc. I have found that collecting data in, or converting data into, an electronic format has many benefits in enabling its analysis. I have structured the organisation of my data within a recognisable filing system (using e.g. folders and subfolders)

and labelled my files with relevant information (such as who, what, when, where and how).

Action research stage	Data sources	Participants
Audit / Pre-step stage	Project Learning Diary Reports to JISC	Lead researcher
	Documents Past research reports Email correspondence Interviews Review of external practice Review of literature	Email to all staff Research projects Pls ILE colleagues University LandT networks University work-based and placement learning forum Lead researcher e-Portfolio advisor
	Project team meeting (1) Steering group meeting (1)	Members of team / group
	Market Research	Local SME employers Subsidiary company
Cycle 1	Project Learning Diary Reports to JISC	Lead researcher
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team
	Project team meetings (2,3,4) Steering group meeting (2)	Members of team / group
	Documentation from design retreat 1 Responses to activities during retreat 1	Project team members
	Evaluation of retreat	Evaluator
	Mid-unit evaluation End of unit evaluation Dialogue between tutor/tutees Learner comments in and engagement with unit	Pilot unit 1 participants
	Market Research	Local SME employers Subsidiary company
Cycle 2	Project Learning Diary Reports to JISC	Lead researcher

Action research stage	Data sources	Participants
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team
	Project Team meeting (5)	Members of team
	Documentation from design workshop 1 (learning needs) Responses to activities during workshop 1 (learning needs)	Project team members
	Mid-unit evaluation End of unit evaluation Dialogue between tutor/tutees Learner comments in and engagement with unit	Pilot unit 2 participants
	Market research	Local SME employers Subsidiary company
Cycle 3	Project Learning Diary Reports to JISC	Lead researcher
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team
	Steering group meeting (3)	Members of group
	Documentation from design retreat 2 Responses to activities during retreat 2	Project team members
	Documentation from workshop 2 (pedagogy) Responses to activities during workshop 2 (pedagogy)	Project team members
	Documentation from design retreat 3 Responses to activities during retreat 3	Project team members
	Mid-unit evaluation End of unit evaluation Dialogue between tutor/tutees Learner comments in and engagement with unit	Pilot unit 3 participants
Cycle 4	Project Learning Diary Reports to JISC	Lead researcher
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team
	Steering group meeting (4)	Members of Group

Action research stage	Data sources	Participants
		JISC Programme Manager JISC Project Officer
	Mid-unit evaluation End of unit evaluation Dialogue between tutor/tutees Learner comments in and engagement with unit	Pilot unit 4 participants
	Documentation from workshop 3 (beyond first unit) Responses to activities during workshop 3 (beyond first unit)	Project team members
Other		
Evaluation	Reports	External examiner (collects and collates feedback) Lead researcher responds / sets action plan
Exit interviews	Responses to semi-structured interviews	Key stakeholders groups: employers, learners (employees), project team
Report-and-respond enquiry	Responses to on-line enquiry statements	Members of an e-portfolio Community of Practice University e-learning advisors Project team participants
Conferences, workshops, seminars	Question and Answer sessions Feedback from audiences / participants	Lead researcher e-Portfolio advisor Participants at events

Table 4.1 Methods for data collection and analysis

5 Data analysis and interpretation

I have facilitated a PAR project which has produced a “*messy patchwork of data sources*” (Winter, 1989) that were collected at all stages of the project (Table 4.1) and primarily consist of qualitative data i.e. perceptions, observations and statements (Riley, 1996, p9). As this is an AR project and the findings from one cycle need to feed into the next, as well as it being qualitative research, where “*you cannot neatly separate data collection from its analysis*” (Riley, 1996, p10), the project team needed to start to analyse the data as it was collected to start to identify emerging themes and to inform the next stage of the cycle. Thus the data collection, analysis and interpretation were enmeshed. As the principal investigator in this project, and in my role as a doctoral student, I have led the data collection, analysis and interpretation and

am solely responsible for the writing up of the work for this doctoral thesis. My role as lead, and as the primary data collector and analyst, is reflected in my choice of the first person in presenting this section. However, I contend that I have achieved a participatory approach through the involvement of key stakeholders in all aspects of the AR cycles, through validation of developmental findings and through co-construction of change interventions within each AR cycle. Through my use of multiple methods of data collection and its analysis through multiple perspectives, by the adoption of participatory AR, I have achieved a kind of bricolage (Kincheloe, 2004 and 2005, and Kincheloe and Berry, 2004), a broader and hence more realistic view than could be achieved through the use of single methods and an individual perspective.

The data analysis and interpretation on this project can be explained as a series of analytical moves that evolved into a ‘funnel approach’ through which I was steadily focusing my interpretation leading to the induction of my findings. I thus progressively built my theory through a series of syntheses which are represented graphically in Figure 4.7.

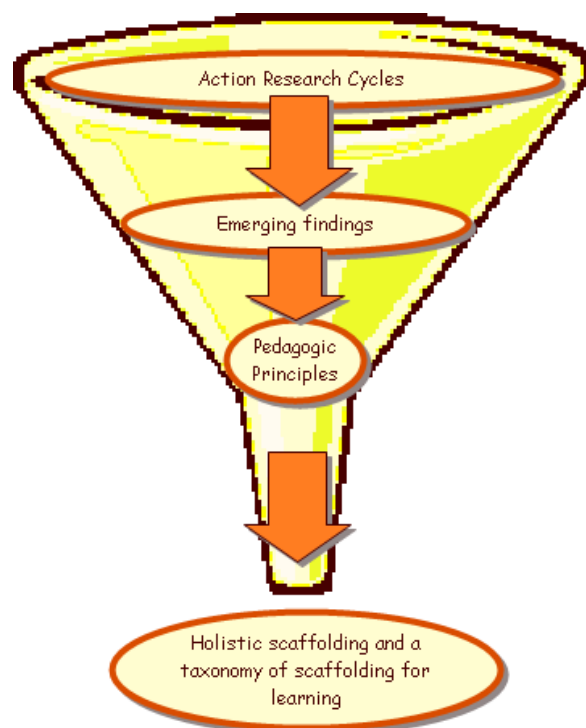


Figure 4.7 Research analytical moves

The theoretical approach to my analysis is explained first.

5.1 Grounded theory approach

In my analysis of the data collected throughout the project I have drawn on insights from a grounded theory approach where “*theory is seen as growing out of data and incidents as they are collected and observed*” (Costley, Elliott and Gibbs, 2010, p88) and I have developed “*a theoretical interpretation*” (Winter, 1998, p66). Key authors on grounded theory are Glaser and Strauss (1967) who proposed “*two moves ... to avoid a descriptive approach*” (Cousin, 2009, p33). Firstly, work out what the data is telling you, not what you think you are looking for, and secondly, think about the data in relation to the literature. Grounded theorists write about the constant coding and recoding of data. I adapted this approach to suit the circumstances of my research. In my particular grounded theory-based approach I progressively determined what the data is saying to me through the ‘funnel’ approach to my data analysis (Figure 4.7) which has allowed me to progressively build my theory from this series of analytical moves.

Riley (1996) provides clear and succinct guidance on a range of techniques to help the researcher “*really hear what your own data have to say*” (Riley, 2006, p49) and recommends that you “*immerse yourself in your data*” (Riley, 2006, p50), use repetition but also distance yourself by including breaks between repetitions. Although she does not explicitly use grounded theory Riley’s guidance supports an inductive approach. Similarly, Cousin (2009, pp35-36), following a ground theory approach, presents her 15 principles for a “*reflexive approach to data analysis*”. Key aspects of these for my research are: analyse data as it is collected, look at what it might be telling you, use ‘memo-ing’ to “*capture reflections and theoretical possibilities*” Cousin (2009, p36) and explore patterns as well as “*the singular and aberrant*” Cousin (2009, p36).

In my analytical approach I adopted these principles to assist me in understanding what the data was telling me thematically and to search for ways of conceptualising the key thematic areas that I identified to help me generate a way of theorising what was happening for the learners. I used this approach on each data set that I collected; some data yielded mainly descriptive results whilst others were more substantial. Based on my analysis I determined the themes that were emerging and from these I extrapolated the key principles for my e-portfolio based pedagogy that underpin the findings of my research. The

key principles led me to the development of my concept of holistic scaffolding and my taxonomy of scaffolding.

5.2 Methods used in data analysis and interpretation

The data collected was, in part, analysed through the natural activities of the project. My data analysis and interpretation method was to ‘capture’ the output of these activities. Table 4.1 presents the formal data sources, the following activities and techniques yielded further data in each of the AR cycles:

- Recognising patterns
- Playing with ideas and using others
- Brainstorming
- Conversations with peers (project team) and lay people (other colleagues, at conferences, seminars, workshops)
- Dialogues with emerging findings, communities of practice, peers, theories, expectations
- Reports, mini-papers, seminars, workshops, journal papers
- Short stories
- Pictures, mind-maps and scatter diagrams
- Using quotations (from the data) as a stimulus for discussions

(See Riley, 1996; Costley et al, 2010; Grbich, 2004; McNiff and Whitehead, 2002).

The data from these activities were not descriptive but generated as a result of the participants analysing where to go next in the research. Through drawing together the data, the interpretations of it and reviewing the progress of the change interventions within and across the AR cycles I extrapolated a series of key principles for my e-portfolio based pedagogy. In order to validate these principles I used a report-and respond enquiry which is explained in the following section.

5.3 Report-and-respond enquiry

The action research cycles, data analysis and interpretation enabled me to design the e-portfolio based pedagogy and to identify key principles in support of this pedagogy. In order that I could validate these findings I adopted an approach that used the principles of a report-and-respond enquiry. Stronach and MacLure (1997, p99) see this type of enquiry as a “*hybrid method to validate research findings*” and that it provides an opportunity

“to carry out mainly qualitative research in an evaluation context quickly; to combine feedback and inquiry in ways that would offer the sponsor some reassurance about the wider validity of the findings; and

to engage the respondents more actively and differently in both the inquiry and the reporting process.”

(Stronach and MacLure, 1997, p104)

Stronach and MacLure see the hybridity coming from the enquiry being a mixture of a questionnaire and an interim report. Respondents can support or criticise, agree or disagree, suggest alternatives, validate or invalidate the propositions presented. In their research Stronach and MacLure found that respondents tended to view the report as provisional in nature and they were more likely to offer “*corrective comments*” as part of their response (Stronach and MacLure, 1997, p111).

My use of the report-and respond enquiry fits with Stake’s (1995, p87) recommendation that the researcher “*provide the reader with reactions to the accounts from data sources*” as one of six activities to assist in the “*validation of naturalistic generalization*” i.e. generalisations that are formed from people’s experiences (Stake and Trumbull, 1982 in Stake, 1995).

In my research I developed a series of summary statements as explanatory notes to the key principles I posited for developing an e-portfolio based pedagogy for work-based learners in SMEs. I shared these with a number of networks with which I am involved i.e. the project team and participants, colleagues within the University and with an e-portfolio community of practice that includes representatives from JISC, software providers and users of e-portfolios in other contexts. Some members of the networks are experienced e-portfolio practitioners, some understand pedagogies and curricula design, and some are novices. The enquiry was presented through an on-line questionnaire (Surveyor) with anonymity given to respondents, although some chose to give details of their area of work. The enquiry and summary responses are included in Appendix 7.

6 Triangulation of methods and validity of findings

I have adopted an interpretivist approach to the analysis of the data generated in my project. In the paradigm of interpretivism there is no single ‘solution’ or ‘truth’; Basse (1999, p43) states: “*People perceive and so construe the world in different ways which are often similar but not necessarily the same.*” Cousin (2009, p184) talks about the constructivist principle where “*we construct meanings of phenomena from an array of social and personal influences*” and

that “*in short, we may not all see the same thing in the same way*”. [There are similarities between interpretivism and constructivism because each paradigm assumes an individual mediates data and makes sense of it based on their own experiences and understandings]. I have used the data to generate ‘a truth’ that emerges from my data analysis. I recognise that another researcher could undertake their own analysis of the data and generate a different truth. Nonetheless, I argue for the generative potential of my interpretation and present here the actions I have taken to validate my findings.

An interpretivist approach recognises the researcher as an integral part of the process of “discovery” which will impact on the search for triangulation and validity. Winter (2000) suggests that validity “*is a concept entirely relative to the person and belief system from which it stems*” and that in qualitative research validity “*might be addressed through the honesty, depth, richness and scope of the data achieved, the participants approached, [and] the extent of triangulation*”, thus avoiding “*narrative fraud*” (Stake, 1995, p130). Glaser and Strauss (1967, p223) argue for “*credibility, plausibility and trustworthiness*”. Cousin (2009, p8) also uses the term “trustworthiness” rather than “validity” for where an interpretivist approach is used; in an earlier paper on AR Cousin (2000, p7) stated that “*action-researchers check the validity of their findings by submitting them to the scrutiny of others*”. Cohen et al (2011, p179) contend that the subjectivity in qualitative data will contribute a degree of bias which will prevent the research being “*100 per cent valid*” and they quote Gronlund’s (1981) statement that “*validity .. should be seen as a matter of degree rather than as an absolute state*”. These authors present Maxwell’s (1992) argument for five types of validity (Cohen et al, 2011, p181): descriptive, interpretive, theoretical, generalizability and evaluative, they also add “*transparency*” from Auerbach and Silverstein (2003).

Irrespective of the terminology, and cognisant of the fact I cannot achieve perfection, what I need to ensure, as far as possible, is that I have achieved an appropriate validity, or trustworthiness, in my findings. I have done this through the use of a range of different data sources (triangulation), co-analysis of data (where appropriate), checking initial interpretations and understandings with colleagues on the project team, seeking feedback through enquiry, independent viewpoint of the external evaluator and through my researcher reflexivity. It is useful to address the six types of validity identified above to explain how my

research has achieved validity. A final category addressing researcher reflexivity is also included.

1. **Descriptive** - my account is factually correct, it accurately records and reports events that happened and I have can show this through the evidence I have collected throughout the project;
2. **Interpretive** - my approach to the interpretation of my data is based on grounded theory through the consideration of what the data is telling me. I have used an inductive approach, but I recognise my role within the research and the potential subjectivity that this could bring;
3. **Theoretical** - I have used the research to construct and surface the concepts that I present in my findings;
4. **Generalizability** - i.e. the theory that I have generated can be used to inform or understand other similar situations. This is evidenced through its use in other applications at the University and through the feedback to the report-and-respond enquiry that I initiated. This shows both internal (within UoW) and external (other HEIs) validity. Bassey (1999, p12 and 2001, p6) refers to the notion of “*fuzzy generalisation*” in that “*particular events may lead to particular consequences*” (Bassey, 2001, p6) (emphasis by me), in which he contends that conclusions from pedagogic research are not generalizable and that they should be considered as propositions instead.
5. **Evaluative** - I have adopted the “*evaluated, judgemental stance*” posited by Maxwell (1992, in Cohen et al, 2011, p181) rather than a “*descriptive, explanatory or interpretive framework*” through my use of participative action research, a grounded theory approach and the validation of my findings through a report-and respond enquiry.
6. **Transparency** - I have been clear in my explanation of my methodology, particularly in the processes that I have used to interpret my data.
7. **Researcher reflexivity** - I have adopted this approach throughout my work in line with the interpretivist paradigm I proposed and I have displayed a sufficiency of data to expose my findings and to support the conclusions drawn. I have strived to achieve researcher reflexivity throughout the project, keeping my own research diary and reflecting both what was happening in the project and my position within it.

7 Ethical issues

Prior to undertaking any work on my project I submitted two requests for ethical approval and received ethical clearance from both Middlesex (for the Doctoral work) and the University of Wolverhampton (for the JISC-funded project) and I have complied with the requirements of both HEIs in undertaking this work.

The focus of my doctoral study is on the JISC-funded project for which I was asked to take on the role of Project Director. My position as Project Director had the potential to be one where I could wield power and authority over the participants and deter them from participating fully within the project and its evaluation and evolutionary processes. Despite having a managerial lead for the project I endeavoured to limit any potential bias by ensuring a participatory AR approach where all participants were equals. Any decisions and choices were not based on my decisions but through collaborative evaluation and discussion to reach consensus before moving on.

The fact that the project was part of my doctoral studies was made known to the participants from the start and individuals had the choice not to contribute. I knew most of the participants prior to commencement of the project and came to know all by the time it was completed. As a result of existing good working relationships and the development of new ones I am confident that all participants provided full and frank contributions to the research and were not inhibited in any way. I found all the University participants to have a professional approach to the work and to be fully immersed in and committed to the success of the JISC-funded project. This approach ensured that I was able to collect comprehensive data for my doctoral studies.

I did not have a direct link with the learners who participated in the pilot units, the academic leaders and school-based mentors acted as intermediaries during the study periods and two project workers undertook the semi-structured interviews. As a consequence the learners would not have cause to think there could be any bias and would have been likely to provide honestly held responses.

7.1 Confidentiality and informed consent

All participants in the project were made aware that it was a research project and that an action research methodology was being used to develop the proposed e-portfolio based pedagogy. Members of the project team were also

informed that I was undertaking a Professional Doctorate through Middlesex and that the ePPSME work was an integral part of my studies.

Learners who undertook the pilot units (as part of the AR cycles) were volunteers (albeit that a small number were nominated by their employer) and knew they were involved in a research project. They did not pay for their studies and they knew that they would be asked to give feedback that would be used as part of the research process (within the AR cycles and for project evaluation). Confidentiality and anonymity have been maintained throughout.

Some of the project outputs (extracts of video interviews and quotations given as feedback) were made available for public view through the internet (as part of the JISC requirements). Where these have been used individuals signed the standard University of Wolverhampton consent form which allows publication and repurposing of such data. I did not need to develop a bespoke release form for my project.

The External Evaluator collected evaluative data from the University employees at key points in the project and provided me with anonymised summaries. This ensured confidentiality was maintained, i.e. I was not told who said what, in order to elicit more frank and honest input from the team.

All data collected has been stored securely on password protected computers or University servers. Access to data has been restricted to those who have a legitimate reason to access it, in particular the learners' e-portfolios and evaluative feedback can only be viewed by the unit tutor, e-portfolio mentor and me (unless the learner has chosen to share her files with others). Where data has been shared with others it has been anonymised first, or where work has been attributed to the individual the express permission for its use has been obtained (as noted above).

8 My role as an insider researcher

8.1 My credentials as an investigator

I have been involved in pedagogic and curricula design for eighteen years, initially as a module leader then as a course leader. I taught in my professional area of Construction Management before moving into an educational development role where I now lead modules on the Post Graduate Certificate (PGCert) course for new lecturers in HE. Throughout my teaching career I have undertaken a number of small, self-initiated, action research projects centred

primarily on improving the student learning experience and the use of technologies to support learning, some of which have been published (Felce, 2002, 2007b; Felce and Harris, 2004; Felce, Mahdjoubi and Ahmed, 2002; Felce and Purnell, 2010a, 2010b, 2011, 2012; Felce and Williams, 2006, 2008; Lawton and Felce, 2008). I have used technology to support learning throughout my career including my introduction of the e-portfolio as an assessment method within the PGCert.

I have designed, developed and managed a number of courses within the construction subject area including the BSc (Hons) in Construction Management (Hong Kong) which was presented for a RAL Claim of 100 credits at Doctoral level, as part of my current studies at Middlesex.

My role as Project Director / PI fits with my role as the University Co-ordinator of Work-based Learning, part of which is to develop work-based learning models that support the University Strategy and Mission.

8.2 My position in the research

Much AR activity adopts the concept of **reflective** practice; I am using a more contemporary concept of **reflexive** practice. Grbich (2004, p71) posits the notion of *positional reflexivity* and quotes Macbeth's (2001, p35) statement that this is where "*the researcher.... examines 'place, biography, self and other to understand how they shape the analytic exercise.'*" I recognise that I am positioned in this research, that I bring 'myself' to the research site and that I will see things differently from another researcher who will have a different "view" because, put simply, they are not me.

My role in the research has an impact on the internal power relationships. I am aware that as the Project Director of the externally funded project on which my research is based and the fact that it is the focus for my Doctoral project, I am invested in its success, probably more so than my peers in the project team. I have recognised this "*differentiated investment and yield*" (Cousin, 2000, p5) and have endeavoured to harness my investment and involvement through the reflexive approach to the research that I have adopted.

Glaser and Strauss (1967, p253) recognised that no researcher "*can possibly erase from his mind all the theory he knows before he begins his research*". The knowledge base that I bring with me to the research is founded in both the construction industry (as a Construction Manager and later as a Project Planner)

and in Higher Education (as a pedagogue: through my work in curricula design and delivery, as a School Learning and Teaching Co-ordinator and in my current role as the University Co-ordinator of Work-based Learning). I have been influenced by all these (and other experiences) particularly in the notion of ‘scaffolding’ as a support in the construction of buildings as well as in the support of learning.

As an insider-researcher I can draw on my long-standing and positive relationship with Academic Schools and University support departments. Although I am an ex-member of one of the Academic Schools I do not have an ‘outsider status’ because I am recognised as being a capable practitioner by my colleagues. All participants in the project were willing volunteers; no member of the team was coerced into joining.

During the project it was clear that there were some tensions within the team, primarily between the academic staff and those from the subsidiary company who led the market research aspect of the project and sourced the pilot units’ participants. The tension was primarily due to differing expectations and understandings about academia, the role and practices of our University, the role of the subsidiary company in the research and needing to find a common ‘language’. A key part of my role in managing the project was one of intervention and brokerage to find a “third room” in which all could work together to achieve the project objectives. My investment in the project and the desire to see it brought to a successful conclusion (for both the University and my Doctoral studies) were key imperatives in my approach to managing any conflict and in seeking an acceptable resolution.

The project has also included a range of methods to enable external scrutiny and thus help validate the research activity, research cycles and project findings. These methods include: a Steering Group to oversee the project; an External Evaluator to collect data and critically review activities and findings; regular input from the JISC Programme Manager and her colleagues; involvement in the JISC network (of which the ePPSME project was a member); presentations of emerging research findings at seminars, workshops and conferences throughout the project; the research methodology employed.

9 Conclusion

This chapter has outlined the methodologies I have adopted and adapted in undertaking this research. I have outlined the methods I have used to collect, analyse and interpret my data and addressed the ethical and confidentiality issues that are apparent. In my research I collected data from as wide a range of sources as possible. I have drawn on this wide range to provide examples to support my findings. *“Data from the different sources tells a similar story”* (Riley, 1996, p131) which serves to triangulate my research findings and thus to validate them.

Costley, Elliott and Gibbs (2010, p91) recognise that *“real-life projects typically combine aspects of more than one methodology”*. In my project I used a participative AR approach to develop the pedagogy, used my own adaptation of a grounded theory approach in the analysis of the data generated, and aspects of a case study approach in writing up the project in a number of peer-reviewed publications. In chapter 5 I present the activities undertaken during my project and through which I applied the principles of participative AR discussed in this chapter.

Chapter 5 Project Activity

1 Introduction

In this chapter I outline the key project activities undertaken to achieve the aims, objectives and outputs. The primary project activity was determined by the activities needed to be completed to achieve the outputs identified within the JISC bid for the ePPSME project; additional activities related to ePPSME and appropriate to the achievement of my Doctoral studies are conflated in this chapter. My research methodology, explained in Chapter 4, uses an action research approach to seek “*developmental transformation*” (McNiff and Whitehead, 2010, p11) whereby findings from one research cycle informs the subsequent cycle. I outline and explain the project activity in chronological sequence, starting with my audit of existing practice and followed by each of the four research cycles in which I report Plan, Act, Observe and Reflect for each one.

The project timeline, presented earlier as Figure 4.4, presents the overview of the activities to which this chapter refers.

2 Pre-step / Audit

Within the audit stage two areas of activity were undertaken: firstly an audit of current practice and secondly interviews with local SME organisations. Both activities were undertaken to inform the design of the first AR cycle. In the following two sub-sections I outline how these were carried out.

2.1 Baseline audit

In the context of my research project, because I was looking to develop a new and innovative pedagogy I wanted to identify current practice to provide lessons learned that could be transferred to, or included within, the initiative. Within my research project the pre-step activity consisted primarily of an audit of existing practice across the University into the different uses of the e-portfolio software, PebblePad, to support learners in the workplace, examples of research and project activity into the use of e-portfolios and an on-going literature review into practices outside of the University.

In order to elicit as wide a range of responses as possible I contacted the following groups to identify where and how they use, or have used, e-portfolios with learners in the workplace (Figure 5.1):

- I sent a University-wide email to all staff
- Spoke to individual colleagues within
 - the ILE
 - the University learning and teaching networks
 - the University work-based and placement learning forum
- I identified past and current research projects investigating the use of e-portfolios.

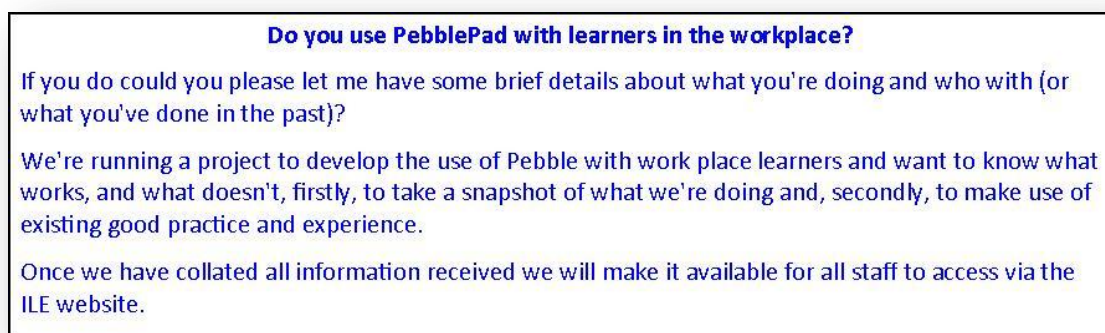


Figure 5.1 Baseline audit question

Once colleagues responded to my initial question I asked for additional detail on the relevant examples as well as any stakeholders evaluations of the use of e-portfolios for the work-based learners.

The baseline audit identified eight key lessons that informed the initial planning and pedagogic development on my project (see Chapter 6 Research Findings).

2.2 Interviews with SMEs

My baseline audit and report identified areas of expertise in e-portfolio use across the University and from this I selected five Academic Schools that represented a range of subject areas through which I could develop and test a pedagogy that would meet the needs of work-based learners within SMEs. The subject areas identified were Construction, Business, Health Care, Law and Applied Science all of whom had expertise in the use of e-portfolios within

existing curricula areas and existing networks of contacts within the local business communities from where we could draw our research to inform the curricula design and learners to test our evolving pedagogy.

My proposed pedagogy is intended to meet identified performance and learning needs of small to medium sized enterprises as determined through interviews conducted with the local business community. Having identified my curricula teams I then worked with a subsidiary company of the University to obtain the data that would be used to inform the curricula design, within the identified subject areas. The subsidiary company conducted interviews with key individuals within the enterprises. The semi-structured interviews were undertaken by 'Learning Consultants' and resulted in the production of a 'Performance Needs Analysis' (PNA) for each interview. The PNA summaries are entered into a database and commonalities in learning needs determined. For the purposes of my research project the interviews initially concentrated on targeting organisations involved in the pilot subject areas to provide the basis for the curricula content for the pilots. It should be noted that the interview activity would not normally target a specific business area but work across communities to identify common areas of learning need. Once these areas have been identified the individual Academic Schools at the University who have relevant subject expertise would be approached to undertake a learning needs analysis (LNA), based on the PNAs collected. The LNA forms the basis of the curricula design that is put forward for validation. The design of the PNA and LNA were outside my control but my project used the data from the interviews to inform the design of the learning outcomes and curricula content.

3 Cycle 1

The first action research cycle was initially intended to commence with the first of three design retreats involving key project participants and identified stakeholder groups (particularly employers and learners). I designed the programme for the first retreat on the basis of the original plan but in the action phase of the first cycle it became clear that I needed to amend the plan to run a series of consecutive, rather than concurrent, pilot units through which we would plan, act, observe and reflect on the emerging pedagogy. An extract from the project timeline shows the key project activities in Cycle 1.

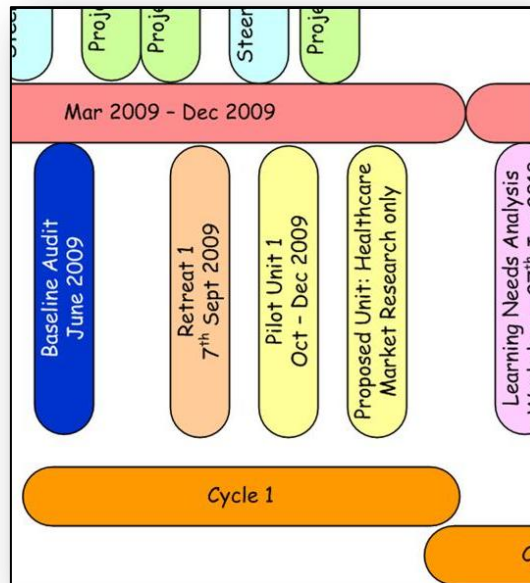


Figure 5.2 Extract from Project Timeline: Cycle 1

3.1 Plan 1

The baseline audit, report and PNA summaries from SME interviews informed our initial pilot unit design. I identified areas of expertise in the use of e-portfolios and academic subject areas in which I could develop and pilot my pedagogy, I had created my project management structure to oversee the achievement of the project outputs, and identified unit tutors and e-mentors (see Chapter 4 and Figure 4.5).

In order to launch the project and the first pilot I ran a 'Design Retreat'. The main aims for the retreat were: to bring together the pilot project participants with the project organisation team, to launch the pilots, to confirm project objectives and outcomes, to build rapport and set direction for the next phase, to set direction and investigate work-based inquiry and action research. Participants in the event were members of the project team, school-based e-mentors, pilot project academic unit tutors, learning consultants and the external evaluator.

3.2 Act 1

As stated previously, my original plan was that we would run concurrent pilots in the five identified subject areas but this required completion of the PNA interview activity that informs the curricula learning outcomes and content in all

five areas. At the time I ran the design retreat the only such activity completed was that which informed the design of the construction-related pilot unit so I made the decision to progress with this pilot ahead of the other four, otherwise we would have fallen behind on our project deadlines.

The interview data identified a perceived learning need to improve methods of internal and external communication for SMEs involved in the construction industry, brought about by a changing economy and consequential changes in the types and locations of projects with which organisations were involved. The unit tutor and e-mentor designed learning outcomes and content to create learning that would be equivalent to a notional 50 hours of learner effort. The unit tutor designed the content and activities and the e-mentor used his experience of working with e-portfolios to locate them within the online environment. The 8 key lessons from the baseline audit were used to inform the design of the first pilot unit (see Table 5.1):

	Summary of lessons learned from pre-step / audit	Action in cycle 1
1	Firewalls can prevent access to software	Unit tutors advised this could be an issue; e-portfolio advisor available to deal with problems
2	Learner support for using software	Contact details for unit tutor, e-mentor and e-portfolio advisor to provide one-to-one advice
3	Blogs for different aspects; monitoring by tutor	Learning includes opportunities for group activities / discussions
4	Dealing with amount of text written	Guidance in learning activities on maximum word count expected
5	Need to scaffold learning	Learning content and activities located within a webfolio structure that includes links to online resources, guidance on activities, contact details, unit outcomes, guidance on using software.
6	Need to deal with ethical issues	Guidance included within the unit webfolio
7	Range of practice in e-portfolio use	Examples shared with unit tutors and e-mentors in design retreat 1. Unit 1 webfolio based on a design used and evaluated within a construction module on the HEA Pathfinder project.
8	Access to external practitioners	Current knowledge and practice shared through activities at the design retreat.

Table 5.1 Key lessons from baseline audit activity

The webfolio tool within the software was used to create a pilot unit webfolio template that learners downloaded into their personal asset store and shared with the tutor (through a gateway). The template included the learning

activities and spaces into which learners could add their comments in response to tasks set, some of which included reflection on their own work practices to start to situate their learning within their workplace. Individual pages on the template presented content, activities and space for response for each week of the notional ten-week course. The draft webfolio template was shared with the project e-portfolio advisor and me to comment on content and format and to proof read prior to it being used with the pilot group of learners. Figure 5.3 presents an extract from a page in the template. The template also included a personal blog for learners to record reflections and to conduct discussions with the unit tutor, and a group blog for collaborative activities (Figure 5.4).

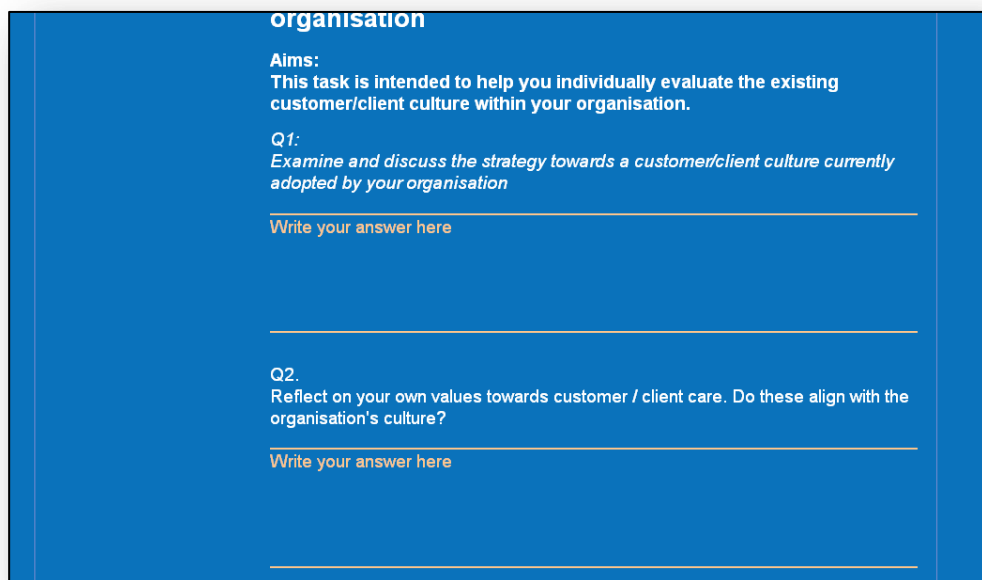


Figure 5.3 Extract from webfolio template Pilot unit 1 showing example activities

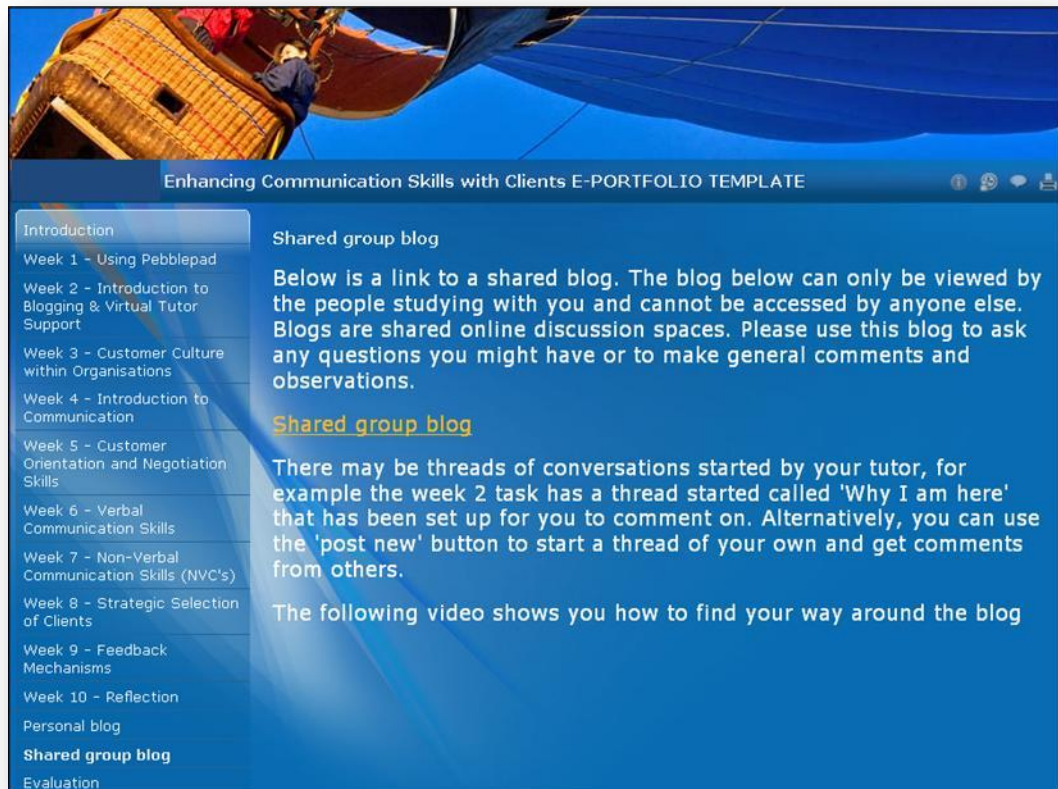


Figure 5.4 Extract from webfolio Pilot unit 1 showing personal and group blogs

I designed a series of evaluative questions to be included in the template to obtain feedback from the learners at the mid-point in the unit and at the end of the unit. The questions were located within a software application called “Surveyor” with hyperlinks included within the webfolio template in the pages for week 5 and week 10, respectively. These questions were dual purpose: firstly to parallel University practice in taught curricula (where mid and end of module evaluation is compulsory) and secondly, to obtain evaluative commentary to inform the subsequent pilot unit design. (Evaluation questions are given in Appendix 5).

The e-mentor had created the unit webfolio template in his own PebblePad account and then made it available to the learners through a gateway created for the unit. Learners were given information on how to access the gateway, to download the template into their own PebblePad accounts, how to personalise and add comments to their webfolio and how to publish their own version of it

back to the gateway so that the unit tutor could view and comment on the learners' responses to the set activities.

Learners for the unit were identified through the PNA interview process and by the unit tutor. An initial cohort of twelve learners enrolled for the unit, eight submitted their webfolio to the gateway and three completed the unit. The unit tutor was the primary contact with the learners with additional input from the project e-portfolio advisor who provided advice and guidance on access to and use of the e-portfolio software. Evaluative comments were collated from the mid and end of unit evaluations (Appendix 5), from email and telephone conversations between learners and unit tutor and between learners and the e-portfolio advisor.

As part of the project I was involved in the parallel development of the quality assurance and validation processes for the design, validation and delivery of the 5-credit units. As far as possible the new processes need to fit in with existing practice but we did not have a procedure for dealing with 5-credit units. My long term proposition is for learners to self-select a combination of 5-credit units as part of a negotiated programme of study leading to an HE qualification but we needed to develop an interim model through which we could prove the quality assurance of the pedagogy. Existing procedures require that all curricula are validated before their first delivery and the procedures for the quality assurance of on-line distance learning (University Guidelines for Flexible and Distributed Learning) require that all learning materials are approved by the School Quality Enhancement Committees. The pilot units that we ran needed to test and comply with these existing procedures and also inform the development of new ones, where these were identified as being needed.

3.3 Observe 1

The webfolio containing the learning content and activities was based on a model that had been used successfully with learners who were studying a semester long module and who had opportunities for face-to-face lectures and tutorials with the tutor. The model required learners to know how to access the software and complete a number of different steps to open each page in the webfolio and add text to the page that was then visible to the tutor through the gateway. Feedback from the pilot showed that learners found this process cumbersome and difficult to understand and that some learners did not complete the unit because they could not overcome these difficulties.

The webfolio was content-heavy and “digital text”; some learners found it easier to print out the webfolio and work with a hard copy of the unit, consulting with the unit tutor via email or telephone rather than using the e-portfolio.

The colour scheme used in the template caused difficulties for some learners and prevented some learners’ comments being visible to the tutor due to poor colour contrast or the automatic text colour rendering by the software (Figures 5.3 and 5.4).

Most learners had difficulties accessing the webfolio, downloading it to their own PebblePad account and publishing it back to the gateway.

Some learner IT accounts were “switched off” before the scheduled unit completion date or on the completion date even though they had negotiated an extension of time with the tutor.

The unit tutor was able to monitor individual progress and engagement with the unit through regularly reviewing and commenting on learner comments added to the webfolios. Non-engagement was followed up with an email or telephone call to find out reasons why and to encourage the learner to reengage with the unit.

In designing, validating and quality assuring the first unit it became clear that there were a number of misunderstandings and sometimes lack of knowledge about the required procedures as well as a need for a model for validating 5-credit units as constituent parts of a larger programme of study - the University had taken a decision not to award credits unless in multiples of 20-credits.

3.4 Reflect 1

Reflection on the experiences in the first cycle identified a number of lessons learned. These are explained here and the lessons learned use to inform the plan and act stages of Cycle 2.

1. Pilots could not be run as concurrent units

At the time we ran the first design retreat the only PNA interviews completed to a necessary stage were those for the construction subject area. In order to progress the project I reviewed the plans and decided to amend the approach from a series of concurrent pilot units to one of consecutive pilot units. This decision was taken to meet the changing circumstances emerging from other

activities and the restraints and constraints that developed and impacted on my project work.

2. Employer and learner voice could not be built into the design retreats

The original project plan was to run a series of 3 design retreats that would involve the key project participants (those who were present at the first retreat) and representatives of both employers and learners on the pilot units. The aim was that the action research cycles would be determined by these design retreats and the activities undertaken between them, hence the programme for the first retreat. In planning for retreat 1 I was conscious that the key focus of the event was around informing the key participants of the aim and outcome and brainstorming pedagogic design issues. Cognisant of the need to ensure employer and learner involvement needed to be clear and focused on their role in the project I decided that they would be able to contribute more to a separate event that was designed specifically for their involvement rather than try to merge with the academic focus of our planned event. Consequently I planned a separate event, to be run one or two weeks later, for employer and learner representations. However, as the project developed it became clear to me that I would not be able to achieve what I planned originally from such an event. Firstly, I did not have the access to the employer and learner groups that was originally envisaged in the project plan and secondly I had to amend the action research cycles originally defined to suit the emerging project. As a consequence of needing to amend the proposed action research cycles, employer and learner involvement was achieved through formal and informal project evaluation.

3. Learners had difficulties accessing the webfolio template, downloading and publishing to a gateway

In common with other groups of learners many in our first cohort were unable to access the software and / or the template created within it. Some of the learners found the difficulties encountered deterred them from continuing with the unit, others were talked through the required processes by the e-portfolio advisor. Clearly we did not want learners to be deterred by the technology nor could we provide one-to-one tuition if the model was successful and we were dealing with multiple cohorts and large numbers of learners.

4. Learners had difficulties editing the template to add their responses to the tasks and activities

The PebblePad software is a very powerful tool but many of our learners are new to higher education and likely to lack confidence in using technology. Some will have the necessary skills, others will not. Feedback from the first pilot, through withdrawal from the programme, informal and formal comments, experiences of the tutor / advisor suggested that a key issue was the model we had used to create the template as learners needed to follow a complex number of activities to add comments and save their edited webfolio.

5. Colour rendering on the template caused visual difficulties

The PebblePad software has limitations in colour rendering, there are only a limited number of options for background and foreground colours, contrast and brightness, font styles etc. The software does not automatically correct colour choices and changing the template settings proved difficult for most of the learners. Difficulties were first identified when the tutor contacted learners to find out why work had not been completed; learners reported that they had added commentary to the webfolio but for some reason it was not visible to the tutor. After some investigation we found this was due to a mismatch between the font colour and background colour resulting in there being too little contrast between the two (Figures 5.3 and 5.4).

6. Webfolio could be printed and used as hard copy

The initial design for the first unit was based on an assumption that learning should be made available for either on-line or off-line learning so that it was equally accessible to a wide range of learners. This was despite my protestations that the purpose of the project was to develop an e-portfolio based pedagogy, that is, by definition, an on-line model. The consequence of the assumption was that some learners chose to print out the webfolio and respond to the activities in longhand on their printed copy. Failure to work in the e-environment meant that they did not test the pedagogy we were developing. These learners would not have access to the benefits we identified as being created by an e-portfolio based pedagogy and none of these learners completed the unit. Rather than learning being designed to be studied in the mode the learner chose I needed the learning design to require learners to study it on-line so that they were forced to use the e-portfolio rather than find what they considered to be easier

alternative. Part of what we needed to do was to start to change the learning culture from a traditional model to a new e-portfolio based approach. The pedagogy is also intended to support lifelong and life wide learning by providing an environment in which all episodes of learning can be recorded and later repurposed and presented as evidence of learning (Figure 2.1).

7. Responses to individual activities could not be accessed other than through the webfolio

One of the reasons for proposing an e-portfolio-based pedagogy was that the software we use offers learners the opportunity to record multifarious learning episodes and to reflect on that learning by reviewing and developing their learning throughout their lifelong and life-wide learning journeys. However, the format used in the design of the first unit template resulted in a restriction on the potential reuse of the recorded activities and comments. Learners would be able to create links from future learning to the webfolio but not to individual comments within it.

8. Process for creating and locking learner IT accounts needed to be reviewed

In a separate, but parallel development to my project a new model for learner identity had been created wherein each learner had a notional registration period of ten weeks from the date of enrolment onto a unit. The learner identity allows access to an IT account and a range of learning support services such as library and electronic resources. If a learner registered for a second unit the ten week registration period would restart to align with that second unit. Where a learner chose not to register for a new unit the IT account would close after ten weeks. However, if there was a delay between enrolment and the start of a unit, or if an extension in time to complete a unit was needed then this registration period would need to be extended. In the pilot we were able to ask for individual accounts to be reinstated for specified periods but this would not be a practical solution for multiple cohorts and larger numbers of students.

9. Method for regularly recording learner engagement is needed

The unit tutor was the only academic to know what progress individual learners had made and I recognised the benefit of keeping a record of weekly learner progress that would serve a dual purpose of allowing another tutor to take over

a unit and to identify any lack of engagement that might indicate a potential to withdraw or fail a unit.

10. Quality assurance and validation procedures need to be reviewed and promoted

The existing procedures were, on the whole, considered fit for purpose for the proposed new pedagogy but a new process for the design and validation of 5-credit units and their relationship to prescribed 20-credit modules needed to be developed. Action needed to be taken to ensure wide knowledge and understanding of the existing and amended procedures.

4 Cycle 2

Reflections on observations from cycle 1 informed the design of the pilot unit in cycle 2 as well as the management of the process and the introduction of an additional workshop, the Learning Needs Analysis workshop. A summary of cycle 2 activities is given in Figure 5.5.

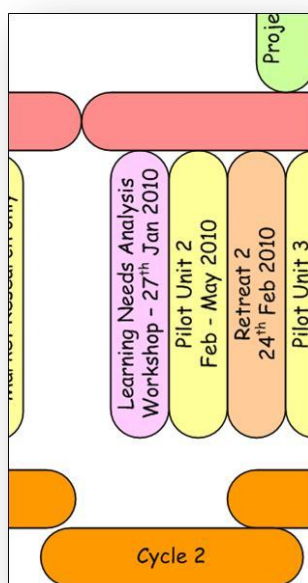


Figure 5.5 Extract from Project Timeline: Cycle 2

4.1 Plan 2

Planning for cycle 2 began early in the action phase for cycle 1. As we reflected on the design of the first pilot, experiences with the learners and evaluations

from formal and informal feedback, we proposed changes to the model we were using in pilot 1. PNA interview activities were continuing with local SMEs and learning needs in the subject areas of business and employment law were starting to emerge as areas for curricula development. The first of these to proceed to unit design was in business organisations. Between retreat 1 and the start of the design stage for unit 2 there had been a change of academic tutor from the business subject area so the new tutor needed to be inducted into the project aims and objectives and the pedagogic development so far. Whilst this resulted in some repetition of activities for both the e-portfolio advisor and me a benefit was that the new tutor was able to add a new perspective to the design process.

Although planning for cycle 2 began during the action phase for cycle 1 we chose not to start delivery of the second pilot until we had completed the first pilot and collated and reflected on all relevant feedback.

The second of the three primary design retreats was set to run between cycles 2 and 3, “to evaluate and review the work undertaken to date and set direction for the next phase” with the key themes and objectives “evaluation and review of work undertaken to date; exploration of employer and learner experiences; dialogue and review with pilot groups. Discussion on draft guidelines, best practice and staff development needs, initial risk analysis and confirmation of deliverables and work streams for next phase” (Appendices 1 & 2).

4.2 Act 2

Using the experiences and key lessons learned from pilot 1 we redesigned the webfolio template and improved the learner support for pilot unit 2. Table 5.2 summarises the lessons learned and how we adapted our pedagogy to address the issues noted (Figures 5.3 and 5.6).

	Summary lessons learned in cycle 1	Action in cycle 2
1	Concurrent pilots units not possible	Action research approach adapted to run consecutive pilot units; each pilot to be a research cycle.
2	Design retreats could not include employer and learner voice	Adaptation of action research approach required a revised approach to achieving employer and learner input and feedback. Rather than involve these groups in the design process we included their input through formal and informal evaluative activities within and outside the research cycles.
3	Difficulties in accessing, downloading and publishing the webfolio	Detailed step-by-step guidance written and published on a webpage and in PDF format for posting or emailing to learners who registered for, and enrolled on, the unit (Appendix 2).
4	Difficulties in accessing and using the webfolio	Redesign of the template to make use of a blog-type tool to record responses to activities and to engage with tutor and other learners in the cohort. (Figure 5.6)
5	Problems with template colours	Redesign of the template and creation of a template format for future pilot units. The software's default colour settings used. Step-by-step instructions given to learners on how to change colours and fonts to personalise their webfolios. (Appendix 2 and Figure 5.6)
6	Webfolio could be printed as hard copy	Principles for on-line learning design published to advise unit tutors and e-mentors of an appropriate model to ensure learners worked in the e-portfolio environment rather than in a hardcopy printout. (Appendix 2 and Figure 5.10)
7	Individual learning episodes could not be separately recorded	Redesign of the template to make use of blog-type tool (see lesson 4, above, and Figure 5.6). Responses to each individual blog post results in the creation of a new resource (asset) in the learner's PebblePad storage area. Hyperlinks can be created to these individual assets to allow the learner to evidence learning episodes.
8	Review learner registration period	Changes made to default registration period to allow for delay in start date and to allow potential for an extension of time; 15 week default period recommended for learners on pilot unit 2.
9	Method needed to record learner progress	Unit tutor asked to record learner progress.
10	Review and promote QA and validation procedures	A model for validation of 5-credit units as part of prescribed 20-credit modules was developed and approved through the University governance processes. Participants in the project were informed of the relevant procedures through a workshop. (Figure 5.7)

Table 5.2 Summary of lessons learned from cycle 1 with planned actions

The revised webfolio template was significantly changed from that used in pilot unit 1 (Figure 5.6). Key changes can be summarised as:

1. Default settings for colours used, typically black text on white background
2. Separate webfolio page for each week's "content" and separate page for each week's activities; maximum two screens of text recommended for each week's content
3. Separate webfolio pages for Unit Guide (Introduction to unit, learning outcomes, introduction to unit tutor)
4. Separate webfolio pages for mid-unit evaluation and end of unit evaluation
5. Separate webfolio pages for personal blog: space for learners to record additional reflective comments (not covered by the learning activities) and for a one-to-one dialogue with the unit tutor
6. Separate webfolio pages for group blog: containing a hyperlink to a shared space where all learners on a cohort can respond to collaborative activities set by the tutor and engage in discussions with others on the cohort.

The blog areas were created by the unit tutor and contained the activities or tasks related to the weekly topic. Learners were given instructions on how to enter their responses to the blog, which involved them typing information into a new window that opened in front of the webfolio page. Submitting/saving their comment resulted in their work being recorded both on the webfolio page and as a separate asset within their individual PebblePad account. Critically, the learners did not have to follow the complex route to edit the webfolio as they did in the first pilot unit.

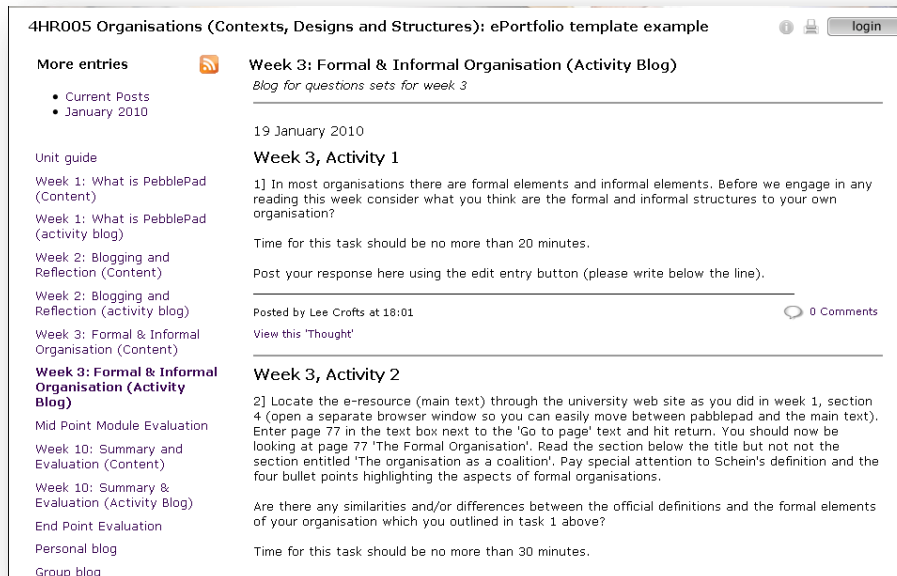


Figure 5.6 Extract from webfolio template Pilot unit 2

On completion of the first unit (cycle 1) and in the design phase for the second unit (cycle 2) I arranged a workshop in which I noted the aim was “to bring together the pilot project participants with the project organisation team to review progress and development to date on the design and completion of the Learning Needs Analysis (LNA), to identify guidelines for users and discuss staff development needs” and where we would “share experiences to date and to confirm processes and timeframes that should be followed” (Appendices 1 and 2). The key resource for the workshop was the diagram showing the relationship between units and modules (Figure 5.7).

The University had set a constraint on the pedagogy that academic credits would not be awarded unless a learner completed multiples of 20-credits. Figure 5.7 indicates how the 5-credit units combine into 20-credit modules. At the same time we were developing this new pedagogy the University was redesigning the whole undergraduate curricula that we needed our model to fit within. Two of the criteria for this were that there would be a maximum of two summative assessments in each 20-credit module and that all modules would include opportunities for formative assessment. Validation of the units and modules included the requirement that each learner could only register for the summative assessment in the module if they had successfully completed the prescribed 5-credit units that contributed towards the module.

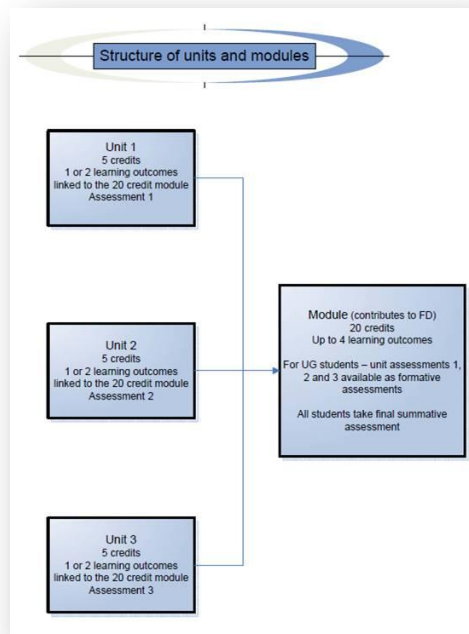


Figure 5.7 Relationship between units and module

Design Retreat 2 was held at the start of cycle 2 and provided an opportunity to reflect on experiences to date and to start to plan the next stage of the work. Key activities during the day were: review of evaluations from cycle 1, discussion around my draft guidelines for tutors and learners, discussions on designing formative and summative assessments and grading criteria and the identification of emergent and anticipated pedagogic issues (Appendix 2 - Web resources).

4.3 Observe 2

The workshop served a dual purpose of sharing experiences on pilot unit 1 and showcasing the identified quality assurance requirements. Participants in all pilots were represented at the workshop and had the opportunity to ask questions and seek further clarification to ensure full understanding. Unit tutors were able to identify additional actions needed to meet University validation procedures. The retreat provided a further opportunity to share additional experiences and to discuss how learner engagement with and achievement on the units could be measured and recorded, as a follow up to the earlier workshop.

The unit tutor, for cycle 2, found the guidance on the webfolio design (Figure 5.10) useful in creating the template although help was needed from the e-

portfolio advisor to create the activity, personal and group blogs. Because the webfolio was created in an individual academic's PebblePad account it had to be shared with other members of the team to edit or revise the content. Difficulties arose in ownership of the webfolio when creating and adding the various blogs and an individual's account could be populated with a large number of assets used to develop the webfolio that might not be available to others who needed to access them.

Learners continued to encounter difficulties in accessing, downloading and publishing the webfolio but the introduction of the blogs for learner input did not cause any difficulties and learners reported that the format was easy to use. The mixture of individual and group activities was generally welcomed; some learners asked for more group activities (the recommendation was for a minimum of 3 in each unit) whilst others found it difficult to write comments in response to others' blog posts.

No learners reported downloading and printing the webfolio and those who completed activities did so within their individual webfolios.

The unit tutor recorded learner engagement with the weekly activities through a template sourced from the internet. Lack of engagement was dealt with through email or telephone contact with the learner, recorded in the same template. Sixteen learners registered for the unit, 2 formally withdrew, 6 did not complete any activities and/or did not download the webfolio, 8 completed the unit within the ten weeks allocated.

4.4 Reflect 2

Lessons learned from cycle 2 can be summarised as:

1. Revised action research approach was successful

Although the decision to change the research cycle approach (from concurrent to consecutive) came about through necessity rather than prior planning, the new approach (where each cycle related to an iteration of a pilot unit) was appropriate to designing and implementing a new pedagogic approach. We were able to plan, act, observe and reflect on changes within a short period of time and implement a new cycle.

2. Accessing employer and learner voices

Our revised approach allowed us to access learner voices through a range of methods (unit evaluations [Appendix 5], email and telephone comments to tutors) but we still did not have direct contact with employers because the interaction with them had been through the company who conducted the PNA interviews.

3. The blog-based template model was successful

The revised template model for unit webfolios, with the integrated blogs (Figure 5.6), was successful as no learners reported any difficulties in adding their responses to the set tasks. Whilst the model was successful we needed to look at ownership of the webfolio, sharing ownership and future management of the templates created for different units. We also needed to consider future-proofing the templates created and ensuring that all users were working on the same version.

4. Learning designs for other units

We recognised that using the blog-based model was appropriate for learners who are new to this e-portfolio based pedagogy we wanted to make more use of the range and depth of in-built functions within the software to create a more substantial learning experience and to start to enable the learners to create their own content within the e-portfolio, rather than just respond to activities set by the tutor. We also needed to be cognisant of the fact we are creating an HE experience which will not be achieved solely through our use of the integrated blogs. Whilst the blog-based activities were shown to work for the first unit in a series we needed to consider how we would develop the model into units 2 and 3 and towards a summative assessment in the associated module. (Figure 5.10 and Appendix 2 - Tutor Guidance Webfolio)

5. Learners had problems accessing, downloading and publishing the webfolios to the gateways

Despite reviewing and rewriting the step-by-step instructions learners still found these tasks difficult and all learners had to be talked through the actions needed by the e-portfolio advisor, as in cycle 1. Feedback suggested that the main difficulties were following the steps to access the gateway and in comprehending the need to put the webfolio back into the place it was

downloaded from (it makes sense when you know how and why, but is confusing if you do not) [Appendices 1 and 11].

6. Recording student engagement

The template used to record student progress was also used to note achievement of weekly tasks and interactions with the tutor (Appendix 2 - Web resources). The tutor was also able to use it to make an assessment of whether or not the learner had achieved the set learning outcomes and therefore whether or not they had successfully completed the unit. This record could thus be used to confirm if learners were eligible to undertake the summative assessment for the module, when combined with other 5-credit units.

7. Tutor : learner contacts

The unit tutor continued to contact learners via telephone and e-mail rather than through the personal blog space in the webfolio. Although this was sometimes an appropriate approach what email and telephone contact did not do was record the resulting dialogue within the e-portfolio and it was therefore not readily accessible for future review and reflection.

8. Revised registration period for learners

There were still some problems with learner registration where the IT accounts were closed too quickly but this was found to be data entry error rather than an issue with the 15 week period proposed. The proposed pedagogy allows for learners to 'step-in' and 'step-out' of academic studies but they will only have access to their PebblePad account when they are registered to study; some learners on the pilots did not want to progress immediately onto other studies but they did want to access the learning from their pilot unit. The 15-week period allowed them flexibility in completing each unit but not open-ended access to their account; we needed to enable permanent access to their webfolio.

9. Workshop/retreat activity and tutor webfolio design guidance were useful

At each stage in the project I found it useful to set out clearly the aims and objectives and to summarise discussions, outcomes and decisions (Appendix 1). Whilst much of this was for my own benefit, as this the way I prefer to work, I noted that other participants also found this approach useful and that this

approach aligned with the concept of scaffolding learning, as the project team, as well as the pilot unit participants, were undergoing a new learning experience.

5 Cycle 3

5.1 Plan 3

The 5-credit unit that was the basis of cycle 3 was on Employment Law. The PNA interviews identified a need for a basic understanding across a range of business sectors and a large number of interested participants. We agreed to progress with the design and delivery of this unit before we completed cycle 2 to take advantage of the interest the PNA interviews activity had created, consequently cycle 2 and 3 overlapped (Figure 5.8), however we were able to introduce some of the lessons we had learned from cycle 2, as explained in the following subsection.

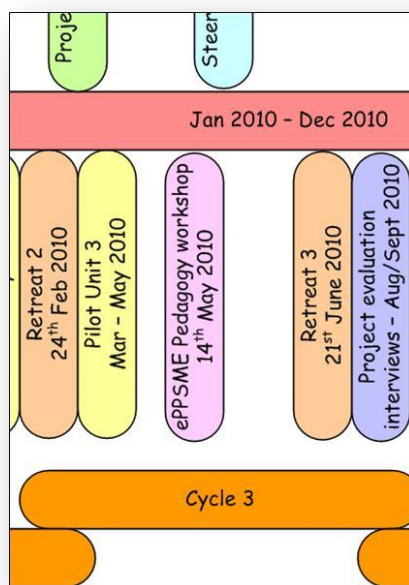


Figure 5.8 Extract from Project Timeline: Cycle 3

5.2 Act 3

The unit tutor nominated for cycle 3 had not been involved in the earlier stages of the project but the e-mentor had attended all organised events. The unit tutor created the content for the unit and was supported by the e-mentor and e-portfolio advisor in the development of the webfolio template.

Lessons learned from cycle 2 and actions taken to address them are summarised in Table 5.3:

	Summary lessons learned in cycle 2	Action in cycle 3
1	Revised action research approach was successful	Continue with this approach
2	Learner voices accessed; employer voice not available	PNA interview company approached to obtain feedback from employers. Evaluation activities to ensure employer voice included. (Appendix 6)
3	Sharing and management of blog-based template model to be resolved	New PebblePad accounts created, one for each Academic School, to host unit webfolio templates.
4	Learning designs for units 2, 3 and module	Propose alternative approaches to develop the blog-based model.
5	Access, download, publish to gateways to be simplified	New gateway structure created to host all 5-credit unit webfolios for ease of signposting to learners. Software provider (Pebble Learning Ltd) consulted and contracted to create automatic download and publish functions. (Appendices 1 and 11)
6	Learner engagement records to be maintained	Pilot template adapted for 5-credit unit use. Template provided to tutors through gateways. Advice on access, completion, archiving given within tutor guidance. (Figure 5.9)
7	Tutor : learner contacts happening outside e-portfolio	Reasons for contact to be made through webfolio wherever possible to be stated within tutor guidance and within learner webfolio.
8	Learners need to access webfolios outside registration periods	PebblePad software allows for export of individual accounts into: An account hosted elsewhere An account purchased by individual licence As an html file (which would be view only) Webfolio templates included instructions on how to export accounts as part of week 10 activities.
9	Structured activities and guidance useful for all project participants	Tutor guidance webfolio developed and made available on-line to all participants. (Figure 5.10 and Appendices 1 and 2) Recognition by me of concept of 'holistic scaffolding'

Table 5.3 Summary of lessons learned from cycle 2 with planned actions

Formative / summative assessment design

In our initial use of 5-credit units we set them within prescribed 20-credit modules (Figure 5.7) but our longer term aim is for learners to be able to negotiate different combinations of 5-credit units. I wanted to include an

appropriate summative assessment method that would enable learners to do this, although this was not essential for the model we were using in the pilots. I proposed a patchwork text methodology where learners would be asked to complete an activity in the final week of each unit in which they were asked to reflect on their learning and which would enable them to show that they achieved the set learning outcomes. When learners have completed three 5-credit units and register for the 20-credit module they will need to complete an additional 50 notional hours of effort which will include the summative assessment for the module. The summative assessment will require the learner to create an e-portfolio in which she reflects on the learning in each of the preceding 5-credit units, through the individual 'patches' plus additional evidence created in their e-portfolio, and on additional evidence from the learning in the final unit (the module that draws the learning together).

Reviewing the blog-based model

Evaluations from cycle 2, from learners and tutors, showed that whilst learners found the blog-based activities easy to access and add their comments, by the end of the unit they were starting to look for alternative ways of engaging with the learning. PebblePad includes a wide range of functionality e.g. action planning, SWOT analyses, personal profiling, recording dialogues, building individual webfolios that provide scaffolding for an excellent HE learning environment for work-based learners and into which they can bring all their lifelong and life-wide learning experiences. We wanted to investigate how we could achieve this within our pedagogy. (Figure 5.9 and Appendix 2 - Web resources).

Pedagogy development workshop

Building on the experience from previous workshop activities to share and discuss proposed pedagogic development I organised another workshop "ePPSME Pedagogy Development" during cycle 3. The aim of this workshop was "to bring together the pilot project participants with the project organisation team to discuss the development of the pedagogy through units 2 and 3 and the assessment in the final unit" with the key aim "to agree the developing use of PebblePad functionality and agree a methodology for summative assessment". (Appendix 1).

Design Retreat 3

Building on the workshop and the evaluations from pilot units 2 and 3 I organised the final design retreat prior to running cycle 4. The aim of the retreat was “to evaluate activities and guidance issued; to agree future dissemination and developments; to set direction for final project phase”. In the retreat we shared individuals’ reflections and lessons learned from their involvement with the project, discussed further the proposal to use a patchwork text methodology and considered plans and opportunities for dissemination, embedding practice and for project evaluation. (Appendix 1)

Project evaluation

Towards the end of cycle 3 I supervised two project workers to undertake semi-structured interviews with a wide range of project participants and stakeholders. I drew up a range of questions for the various groups and provided the workers with the contact details for all those who had been involved in the project. (Appendices 1, 2 and 6)

5.3 Observe 3

The learner voice continued to be provided through the unit evaluations (Appendix 5) and from the tutor and learner webfolios. There was limited employer voice provided through the PNA interview company and we had to rely on the small amount of feedback from employers who agreed to be interviewed by the project workers (Appendix 6).

The new PebblePad accounts in which unit designers could share ownership were easy to set up but were not used until the final pilot in cycle 4, due to the overlapping of pilots in cycles 2 and 3.

The use of a common gateway for the webfolio templates was introduced for pilot unit 3 but learners still experienced problems in setting up their webfolio in the gateway. The auto-download and auto-publish functions that we commissioned PebblePad to develop (Appendix 11) were not available for this cycle.

The unit tutor used the learner engagement record template but in a different way to the tutor in the previous cycle. Records were kept of contact with learners but not within the template as we had asked.

Contacts and dialogue with learners continue within and outside of the webfolio environment. Feedback from learners showed a wide variation in experience across cycles 1, 2 and 3 primarily due to different tutor approaches to engagement with the learners.

Learners who used the 'export webfolio' guidance reported that they were able to make a copy of their complete portfolio and that they were likely to view it in the future.

The tutor and learner guidance continued to be developed within two independent webfolios which were made available to view through a public URL. (Figure 5.9 Learner support webfolio and Figure 5.10 Tutor guidance webfolio).

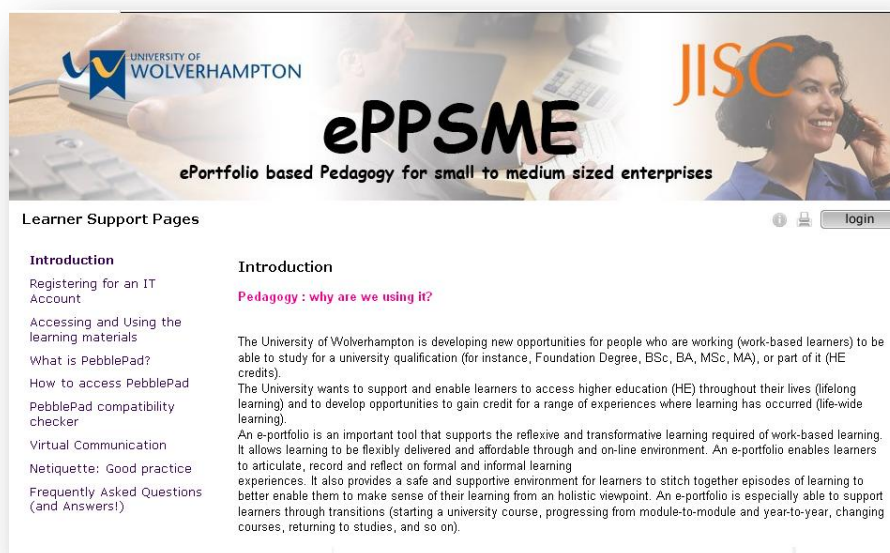


Figure 5.9 Learner support webfolio



Figure 5.10 Tutor Guidance Webfolio

Project participants were positive about the potential use of the patchwork text based methodology but we were not able to implement the proposal in this cycle. Likewise, we considered possible developments from the blog-based model but were not able to implement them. In the workshop and design retreat we started to identify how we could move the blog-based model forward.

Attendance and involvement in the pedagogy development workshop was excellent with most participants attending. Design retreat 3 was less successful because it clashed with a number of other commitments for many of the participants, although the event was due to run all day I called it to a close at lunchtime as there were too few people to make it worthwhile running the afternoon session.

The project evaluation interviews (Appendix 6) were conducted over a three month period and all participant groups responded. The interviews were intended to provide evaluative data to assess the success of the project approach and the emerging pedagogy, rather than to inform the design of the unit for cycle 4.

5.4 Reflect 3

Lessons learned from cycle 3 can be summarised as:

1. Opportunities exist to hear learner voice

A number of methods of obtaining feedback from the learners has been outlined (mid-unit evaluation, end of unit evaluation, learner-tutor dialogue, blog comments, semi-structured interviews) and changes were made to the pedagogy to improve the learner experience. Surveyor was used to host the unit evaluations, I administered this through my Surveyor account but this is not easily scalable for multiple cohorts and units. The data has been maintained in another software application that is unfamiliar to many academics and administration can be cumbersome and time-consuming: we need a better method to collect this evaluative data.

2. Limited access to employer voice

The employer voice has only been heard through end of cycle interviews. Our original plan was that employers were equal partners within the pedagogic development to ensure that the tri-partite relationship (employer - learner - academic) was fully catered for. The use of a third party to undertake the PNA interviews resulted in the employer being removed from direct involvement in the pedagogic development. The PNA interview company was tasked with identifying employer representation for the Steering Group but this was not achieved.

3. Shared accounts for developing webfolios not implemented

The pilot units in cycles 2 and 3 overlapped so we were not able to test this approach. The final pilot unit, in cycle 4, will allow this to be tested.

4. Revisions to blog-based model not implemented

All four units in the pilot test and develop the evolving pedagogy for the first unit in each module so it is not possible to introduce our proposals for going 'beyond the blog'. Outside the ePPSME project developments we were starting to develop units 2 and 3 so that learners from our pilot units could progress their studies. Within the project we needed to do more to investigate how we could enhance the model and ensure that the first units led into the subsequent units.

5. Common gateway for units enabled ease of access

We have not been able to fully test this approach; it was introduced to help learners navigate their way through the university gateways (a fairly complex network) to download the correct webfolio. In cycles 2 and 3 some learners downloaded webfolio templates for units they were not studying. The development of the auto-download and auto-publish functions (see below) will significantly reduce the need for learners to navigate the gateways so we do not anticipate this being an issue for future cohorts of learners.

6. Learners continue to experience difficulties in getting started with webfolio

Pebble Learning Ltd developed two new functions in the software: auto-download and auto-publish. When learners register to study on a unit they are added to the relevant gateway for their unit and their cohort; the required unit template is saved into the same gateway. The next time learners open their PebblePad account they see two additional windows: firstly, notification they can download the webfolio and, secondly, they are asked to publish the webfolio to the gateway. All learners need to do is click the 'Yes' button in each window and they are given instructions to do so.

7. Different tutors create variable learner experiences

We reviewed the learner feedback and reasons for the comments expressed; the main cause for concern was that the learner had a different experience to the one they expected. We revised our tutor guidance to require tutors to specify clearly expectations for the unit, in particular how often the tutor would comment on blog posts, how to contact the tutor and normal time for response.

8. Learners were able to export a version of their webfolio for record purposes

The instructions we provided for this were successful.

9. The proposed patchwork text approach to assessment not implemented

We were not able to test this in cycle 3.

10. Varied success in running workshop / retreat

I used the same approach towards organising and planning these events as in the previous cycles with many weeks' notice of the date; all participants were asked to confirm availability against a range of possible dates (through an on-line tool,

Doodle.com) with the event arranged on the most popular date. Draft and final programmes were written and shared with participants. All those who did not attend, or only attended for part of the day, had work-related reasons; it is likely that the lack of success for retreat 3 was due to coincidence rather than a lack of willingness to engage. There is no other evidence that the workshops / retreats organisation was not an appropriate approach.

6 Cycle 4

6.1 Plan 4

The final action research cycle involved a fourth 5-credit unit (in environmental waste management) and a close-out workshop to review the project and consider actions needed to continue to develop the pedagogy beyond the project timeframe (Figure 5.11).

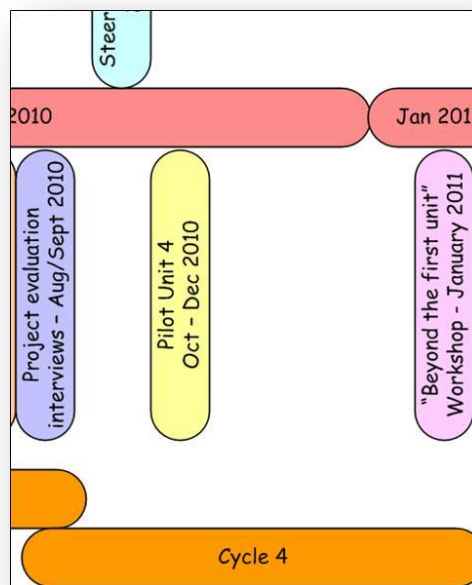


Figure 5.11 Extract from Project Timeline: Cycle 4

6.2 Act 4

	Summary lessons learned in cycle 3	Action in cycle 4
1	Learner voice was heard; alternative to “Surveyor” model needed	The ‘form builder’ tool in PebblePad was used to recreate the question sets within the webfolio template.
2	Limited access to employer voice	This could not be addressed within the fourth cycle. Consideration needs to be given to how this could be addressed in future.
3	Shared accounts for webfolios not implemented	Webfolio template for Cycle 4 to be created in shared account.
4	Revisions to model not implemented	Not relevant to include in pilot unit 4. Tutor guidance to include options for future unit developments.
5	Common gateway for access to units	No action needed; assess alternative auto-download and auto-publish functions.
6	Learners continue to have access issues	Test auto-download and auto-publish functions.
7	Different tutors create variable learner experiences	Webfolio templates to clearly state unit expectations for learner and tutor engagement.
8	Learners could export their work	No action needed.
9	Patchwork text approach not implemented	Week 10 to include a formative assessment opportunity using patchwork text methodology.
10	Varied success in workshop/retreats	Continue to review organisation, attendance and engagement.

Table 5.4 Summary of lessons learned from cycle 3 with planned actions

The design of the final pilot unit began following Retreat 3; we had finalised all design principles and guidance and were able to implement changes proposed from cycle 3 in cycle 4.

At the end of the cycle I organised a final workshop “Beyond the first unit” to “confirm progress to date and development of units towards modules and to showcase and discuss extended use of PebblePad in units 2 and 3 and the modules”. Within the workshop we shared ideas for alternatives to the blog approach including potential for face-to-face dialogue between learners and tutors via applications such as Skype, WebEx and Elluminate. We shared lessons learned to inform future practice.

6.3 Observe 4

The mid and end of unit evaluation questions hosted within the webfolio were easier to manage and allowed the tutor better control of the process and direct access to the learner feedback. However, in Surveyor the tutor can view a

summary of the comments in one place; in PebblePad he has to view each individual webfolio.

The introduction of the shared account to develop the webfolio was successful, it was easier to manage and collaborate on the work needed and allowed a shared repository to evolve for the 5-credit units across each Academic School enabling easier iteration control. The use of the common gateway structure further supported template version control where copies of the template used by each cohort, all learner webfolios and the record of learner engagement can be archived.

The auto-download and auto-publish functions worked as anticipated and removed the need to talk any of the learners through the process.

Clear guidance was included in the webfolio to ensure learners and tutor understood the expectations from each other; learners completed an activity in week 1 where they shared their own expectations of how they would engage with the learning. Feedback from the learners did not suggest there were any issues.

Learners found the patchwork activity in week 10 useful in drawing together their learning on the unit and in further developing a reflective approach to their learning.

The tutor and learner guidance webfolios were effective.

6.4 Reflect 4

Lessons from cycle 4 can be summarised as:

1. Further review of unit evaluation method is needed.

Surveyor draws all feedback into a summary document; the webfolio based approach means that tutor has to look at each individual webfolio to read individual learner comments. There is not currently a function in the software that allows us to automatically summarise the comments, an alternative web-based application might be suitable e.g. 'hot potatoes'.

2. Collaborative webfolio design is enhanced through a shared PebblePad account

Pilot unit 4 proved that this is an effective approach to webfolio design. Additional benefits of this approach are the opportunity for a number of users to easily access the account for future unit development and for improved version control.

3. Gateways can be used to archive material

This is not unique to the pedagogy, it is part of the software, but we have used this function to maintain an archive for QA requirements.

4. A patchwork text methodology is appropriate

Early feedback on the use of this in week 10 and proposed use for summative assessment suggests it can be used by the learner to reflect on their learning and to evidence achievement of learning outcomes. Further work will be needed in taking the pedagogy forward to determine the appropriateness of this methodology across a number of units and within the summative assessment of a module.

5. A scaffolded approach to learning is needed

All the learners involved in the project (students, tutors, project team, steering group, project workers) benefitted from the scaffold created through the approach I adopted. Clear guidance is needed for each stage of a learning journey and for all aspects of the e-portfolio-based pedagogy: an 'holistic scaffold'.

7 Conclusion

In this chapter I have reported the activities undertaken to develop an e-portfolio based pedagogy. I have shown how the action research cycles were used to reflect on the activities and how this informed the developmental transformation. For each cycle I have presented a summary of observations and reflections to explain the changes implemented in the following cycle. In the next chapter, Research Findings, I show how the developmental findings introduced in this chapter led to my emergent findings and to my research findings.

Chapter 6 Research Findings

1 Introduction

The nature of AR requires continual analysis and interpretation of data during and between the research cycles in order to determine the impact of the enacted change interventions (see my discussion on AR in chapter 4). These evaluative, or developmental, findings have been included, in part, within the previous chapter, Project Activity, in order to explain the change interventions introduced in each phase. In this chapter I will present some of the emergent findings together with examples of data that informed these developmental interpretations. My developmental interpretations led, in turn, to my research findings, which are posited later in this chapter.

2 Presentation of results

2.1 Emphasis on “interpretive products”

In writing up this chapter I have struggled, at times, with balancing my assumed need to present ‘evidence’ to support my ‘findings’ with my phenomenological approach through which I am interpreting the data to develop my understanding of events using my adaptation of a grounded theory approach. The concept of ‘evidence’ suggests that the results presented are facts and they are either right, or wrong. My interpretivist approach means that my findings are ‘a truth’ that has evolved through my analysis and (as I explained in Chapter 4) other interpretations are possible. Sandelowski (1998, p376) quotes Lofland and Lofland’s 1995 concept of “*descriptive excess*” where

“researchers will summarize as much as they can of their data, in the hopes of getting it all in [and] at best, [present] only a very preliminary form of analysis aimed at surveying or getting a sense of what they have in their data, rather than making any sense of their data.”

Sandelowski goes on to state that the emphasis in qualitative research reporting needs to be on the “*interpretive products ... namely, the theories themselves.*” (1998, p377) Data provide “*supporting roles*”. An alternative view is presented by Chenail (1995, p2) who states “*you should make every effort to feature the data*” and “*Present as much of the data you collected as is physically possible in your papers and presentations.*” However, Chenail later recommends

“winnowing” data to sort the wheat from the chaff, the importance of juxtaposing “data excerpts with your talk about the data” (1995, p4) and “Don’t overstate the data and don’t understate it as well.” (1995, p5). Consequently, in the presentation of my results I have put the emphasis on the development of the “interpretive products”, using examples from the data to support my interpretation of them.

2.2 Chronological approach

In chapter 4, I explained how I used a series of research analytical moves (Figure 4.7) to build my theory progressively through each research cycle. Furthermore, I explained that at each stage I interpreted what the data was telling me thematically and from the themes that emerged during the AR cycles I extrapolated the key principles for the e-portfolio based pedagogy. Thus the chronological aspect of my research was key to my evolving interpretations and to my research findings which emerged through the progressive interpretations across the AR cycles.

This approach is recommended by Sandelowski (1998, p379) who states that:

“Findings organised according to a temporal logic show, in the write-up itself, the unfolding of a process as it happened in real time, as researchers have constructed it from the data they collected.”

It is also one of those proposed by Chenail (1995, p6) who writes:

“The data are presented in a chronicle-like fashion, showing the course of the researcher’s personal journey in the study. This style is reminiscent of an archeological style of presentation: What was the first “relic” excavated, then the second and so forth.”

In the following section I therefore follow a chronological approach in which I concentrate on what I consider to be some of the critical issues in my emerging pedagogy. I have limited myself to a smaller number of issues that I have followed in some detail through each cycle rather than try to explain all aspects that emerged but in less detail. The research findings and pedagogic principles that I present later in this chapter were drawn from the full range of the data and its analysis within and between cycles than I have included within this chapter. Consequently, the emerging findings in the following section can be seen as representative of the analyses I conducted throughout my project.

3 Emerging Findings

As I elaborated in Chapters 4 and 5, (Methodology and Project Activity, respectively), I have followed four phases in the AR cycles, namely: plan, act, observe and reflect. I have organised my discussion of process and preliminary findings according to these research cycles. Within each cycle I identify the key change interventions enacted and my interpretations of the data through the themes that were emerging. Key data sources were identified in Chapter 4, Methodology (Table 4.1) and I have drawn the example data that I present in this chapter from a range of those sources and from a cross-section of participants in the research. Table 6.1 re-presents Table 4.1 with the addition of a final column which summarises the change interventions determined from the data analysis which informed the pedagogic design for the next cycle in the AR.

Action research stage	Data sources	Participants	Change intervention
Audit / Pre-step stage	Project Learning Diary Reports to JISC	Lead researcher	Identified existing practice and areas for consideration in design of first pilot unit
	Documents Past research reports Email correspondence Interviews Review of external practice Review of literature	Email to all staff Research projects PIs ILE colleagues University LandT networks University work-based and placement learning forum Lead researcher e-Portfolio advisor	Eight key lessons informed pilot design (See Chapter 5) Firewalls can prevent access to software Learner support needed for using software Blogs can be used for different aspects Dealing with amount of text written
	Project team meeting (1) Steering group meeting (1)	Members of team / group	Need to scaffold learning Need to deal with ethical issues
	Market Research	Local SME employers Subsidiary company	There is a range of practice in e-portfolio use Need to access external practitioners. Established learning outcomes for pilot 1.
Cycle 1	Project Learning Diary Reports to JISC	Lead researcher	Established ten summary lessons to inform cycle 2 (see Chapter 5):
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team	Concurrent pilot units not possible Design retreats could not include employer and learner voices
	Project team meetings (2,3,4) Steering group meeting (2)	Members of team / group	Difficulties in accessing, downloading and publishing the webfolio

Action research stage	Data sources	Participants	Change intervention
	Documentation from design retreat 1 Responses to activities during retreat 1	Project team members	Difficulties in accessing and using the webfolio Problems with template colours Webfolio could be printed as hard copy Individual learning episodes could not be recorded separately Review learner registration period Method needed to record learner progress Review and promote QA and validation procedures Established learning outcomes for pilot unit 2.
	Evaluation of retreat	Evaluator	
	Mid-unit evaluation End of unit evaluation Dialogue between tutor/tutees Learner comments in and engagement with unit	Pilot unit 1 participants	
	Market Research	Local SME employers Subsidiary company	
Cycle 2	Project Learning Diary Reports to JISC	Lead researcher	Established nine summary lessons to inform cycle 3 (see Chapter 5): Revised AR approach successful Learner voices accessed; employer voice not available Sharing and management of blog-based template model to be resolved Learning designs for units 2, 3 and module Access, download and publish to gateways to be simplified Learner engagement records to be maintained
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team	
	Project Team meeting (5)	Members of team	
	Documentation from design workshop 1 (learning needs) Responses to activities during workshop 1 (learning needs)	Project team members	
	Mid-unit evaluation End of unit evaluation	Pilot unit 2 participants	

Action research stage	Data sources	Participants	Change intervention
	Dialogue between tutor/tutees Learner comments in and engagement with unit		Tutor : learner contacts happening outside the e-portfolio Learners need to access webfolios outside registration periods Structured activities and guidance useful for all project participants Established learning outcomes for pilot unit 2.
	Market research	Local SME employers Subsidiary company	
Cycle 3	Project Learning Diary Reports to JISC	Lead researcher	Established ten summary lessons to inform cycle 4 (see Chapter 5): Learner voice was heard: alternative model to Surveyor needed Limited access to employer voice Shared accounts for webfolios not implemented Revisions to model not implemented Common gateway for access to units Learners continue to have access issues Different tutors create variable learner experiences Learners could export their work Patchwork text approach not implemented Varied success in workshop / retreats Established learning outcomes for pilot unit 2.
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team	
	Steering group meeting (3)	Members of group	
	Documentation from design retreat 2 Responses to activities during retreat 2	Project team members	
	Documentation from workshop 2 (pedagogy) Responses to activities during workshop 2 (pedagogy)	Project team members	
	Documentation from design retreat 3 Responses to activities during retreat 3	Project team members	

Action research stage	Data sources	Participants	Change intervention
	Mid-unit evaluation End of unit evaluation Dialogue between tutor/tutees Learner comments in and engagement with unit	Pilot unit 3 participants	
Cycle 4	Project Learning Diary Reports to JISC	Lead researcher	Established five summary lessons to inform any future development (see Chapter 5): Further review of unit evaluation method is needed Collaborative webfolio design is enhanced through approach adopted Gateways can be used to archive material A patchwork text methodology is appropriate A scaffolded approach to learning is needed for all participants.
	Project blog Project website Email correspondence	Lead researcher e-Portfolio advisor Project team	
	Steering group meeting (4)	Members of Group JISC Programme Manager JISC Project Officer	
	Mid-unit evaluation End of unit evaluation Dialogue between tutor/tutees Learner comments in and engagement with unit	Pilot unit 4 participants	
	Documentation from workshop 3 (beyond first unit) Responses to activities during workshop 3 (beyond first unit)	Project team members	

Other			
Evaluation	Reports	External examiner (collects and collates feedback) Lead researcher responds / sets action plan	Informed AR cycles Used to validate findings
Exit interviews	Responses to semi-structured interviews	Key stakeholders groups: employers, learners (employees), project team	Used to validate findings
Report-and-respond enquiry	Responses to on-line enquiry statements	Members of an e-portfolio Community of Practice University e-learning advisors Project team participants	Used to validate findings
Conferences, workshops, seminars	Question and Answer sessions Feedback from audiences / participants	Lead researcher e-Portfolio advisor Participants at events	Informed AR cycles Used to validate findings

Table 6.1 Change interventions identified through thematic analysis of observational data

The first stage of my research was that of audit in which I determined existing practice in the use of e-portfolios with learners in the workplace and which informed the design of the first AR cycle.

3.1 Pre-step / audit

3.1.1 Baseline audit

The initial stage allowed me to map existing practices from which I identified six key areas of activity that were relevant to my project: Foundation Degrees, Undergraduate, Postgraduate, CPD, External projects and Other uses (Figure 6.1). In my mapping of the existing practices I looked for models that could be adapted in my project and for common characteristics that could be used to inform the adaptations needed. Figure 6.2 summarises the common characteristics identified, further detail on the audit is given in the ePPSME Baseline Report Appendix 8.

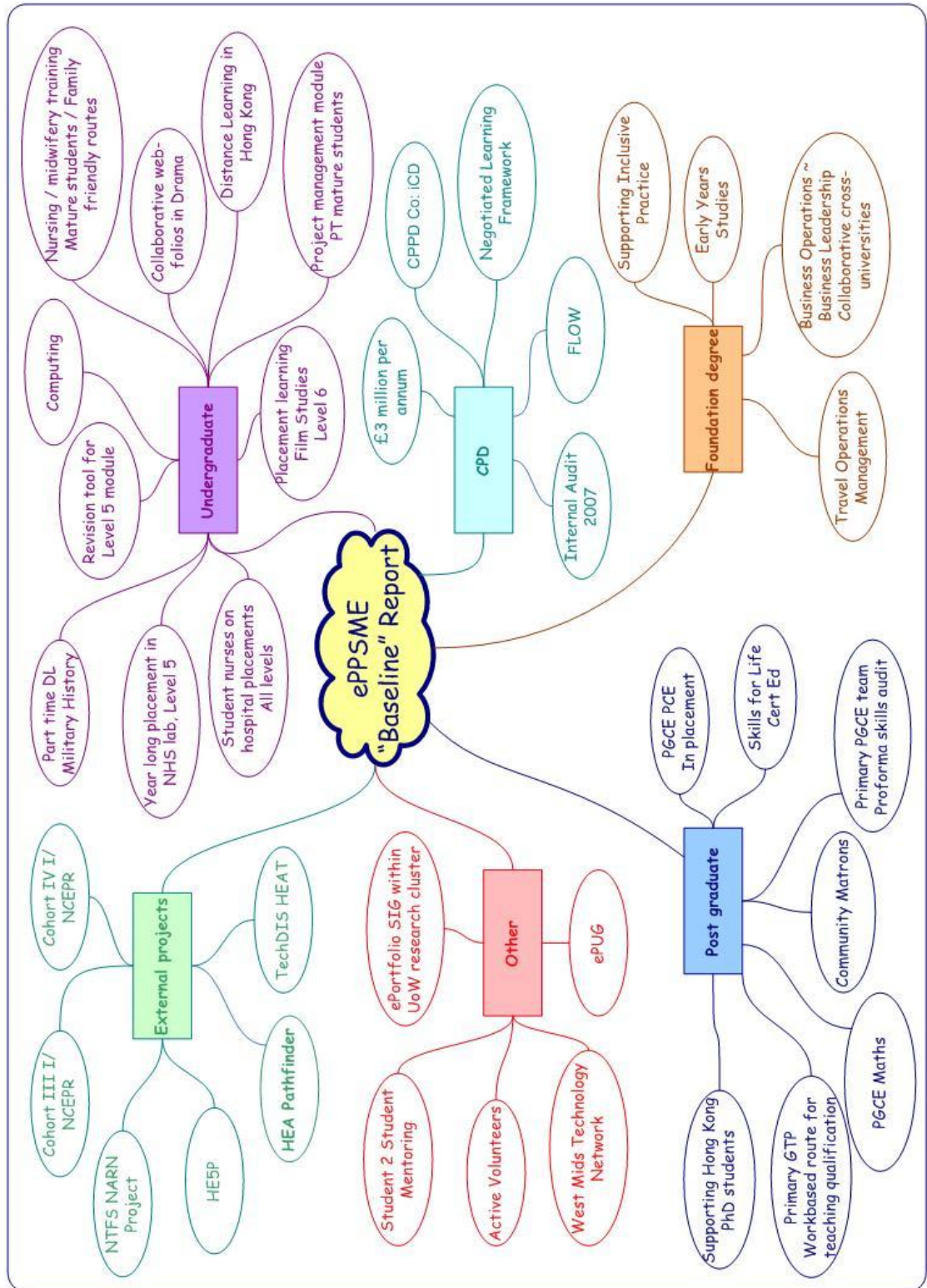


Figure 6.1 Relevant activity at the University of Wolverhampton (Felce, 2009)

1. Firewalls can prevent access to software - this will have implications for work-based learners in ensuring that they can engage both within and outside work.
2. Learners often need support to learn how to use the software - effective and cost-efficient solutions need to be developed that will require minimal tutor support.
3. Blogs are sometimes used for social networking - learning through social networking can be encouraged through a separate blog that is monitored by a tutor. Different blogs can be provided for different aspects of the curriculum.
4. Learners sometimes write large amounts of text - tutors can monitor and specify maximum word counts where necessary.
5. Scaffolded activities help learners engage - ensure activities that are included are scaffolded in a relevant way appropriate to the learners and the type and level of study.
6. Use of data and other confidential information can be a significant concern - ethical issues must be addressed through appropriate tutor interventions and clear learner guidance.
7. There is a range of practice in use of eportfolios within and across the university - this can be used to inform and support the development of the pedagogy for their use with SMEs
8. Members of the project team and school mentors have access to external practitioners who may be able to inform the project.

Figure 6.2 Baseline Report: Common Characteristics (Felce, 2009)

3.1.2 Interviews with SMEs

The semi-structured interviews to identify common performance needs were targeted, initially, at SMEs working in business sectors that were aligned to our planned pilot units. This was an artificial approach for the purposes of our project which identified common learning needs within some of those business sectors and areas where the introduction of our proposed pedagogy was not appropriate.

- **Interview instruments identified common needs across a range of business sectors**

Although the initial interview work was directed to organisations related to the construction industry, for the pilot unit in the first cycle, it also suggested learning needs around business organisation and management and in employment law. The research instruments used by the subsidiary company (to which I do not have access) were effective in drawing together employer and learner needs across a range of business sectors to identify common learning needs. This is important for the proposed business model that the University was developing and which the e-portfolio based pedagogy was intended to support. However, in itself, it does not impact on the pedagogy, other than to inform the

development of the learning outcomes that were ‘delivered’ through the e-portfolio based pedagogy.

3.2 Action research cycles

In using an action research approach I needed to present and briefly explain the developmental findings from each cycle in Chapter 5 Project Activity because the findings from each cycle informed the planning and action in the subsequent cycle. Within this section I will summarise and discuss these developmental findings and the e-portfolio based pedagogy that has emerged through the project.

There were four AR cycles completed in our research. In this section I will summarise the change interventions, the observations and the change formulation for the subsequent iteration together with relevant evidence.

3.2.1 Cycle 1

- **The change intervention**

The first cycle involved the adaptation of an existing use of the e-portfolio software: a model that was used with students on a taught module.

- **Observations**

- **The software needs to be easy to use / intuitive**

The structure (scaffolding) that we created for the first pilot through the webfolio template with additional written guidance was only partially successful. Learners reported that they could not follow the guidance given to access and publish the template. The learners’ feedback suggested this was because the process they needed to follow, although correct, was not logical or ‘sensible’. The e-portfolio advisor had to spend a lot of time talking individual learners through the log-in and template access and edit processes. With the relatively small numbers on the pilot cohorts this individual support was manageable but would not be realistic if there were multiple cohorts and larger numbers of learners studying concurrently. Typical comments from learners included:

“Renaming and sending the webfolio was straightforward with [e-portfolio advisor] talking me through the process step by step.”

(Learner N, Pilot 1, comments about support)

“The renaming and posting was straightforward, but only because [e-portfolio advisor] guided me through it.”

(Learner P, Pilot 1, comments about support)

The required learner editing of the webfolio was too complex for many, partly because they were not confident in using IT and partly because the software is not intuitive to use. Again, written instructions were provided, some learners were able to use them, others could not.

One learner stated:

“I’m afraid to say my initial thoughts on PebblePad are not that good. It doesn’t appear very intuitive and can be a little confusing and easy to get lost in. I think this is mostly down to the user interface which changes in appearance from page to page.”

(Learner U, Pilot 1, negative comments from activity week 2)

and another:

“I consider myself fairly computer literate but this program does not on first sight seem very friendly a good system would be able to guide the new user through without having to have so many instruction lists!”

(Learner B, Pilot 1, negative comments from activity week 2)

One learner with a positive impression stated:

“First impressions were confusing, but once I had a play around with it, and got used to the layout and personalised it, it was a lot more user friendly.”

(Learner C, Pilot 1, positive comments from activity week 2)

The first pilot also showed that the webfolio was cluttered; it contained too much detail and used inappropriate background colours and fonts (Figures 5.3 and 5.4; Appendices 1 and 2). It was more easily accessed as a printed copy and did not separately record activity responses and personal reflections.

“I found it much easier to print materials especially if it was a lot to read. It’s easy then to carry it around and to underline and highlight and make notes.”

(Learner R, Pilot 1, end of project interviews)

The external evaluator, in his comments about pilot 1 noted:

“There is, perhaps inevitably, a lot of content for students to scroll through. I think that students, as they will access this material either at home or at work, will end up printing off copies to read.”

– **Enabled dialogue between tutor and learner**

My observations during the running of the first pilot confirmed that the use of a webfolio approach to provide learning materials, a space for learners to add their responses, and for tutors to comment on those responses, provided the tutor and learners with an on-line environment in which they could enter into a dialogue and retain a record of their discussions.

– **Context sensitive scaffolding**

It was stated earlier that the webfolio template model we used in Pilot 1 was based on existing use within a taught module. Feedback from learners, as evidenced in the preceding quotes showed that a format that worked successfully with students on a taught module did not transfer successfully to our distance-learning model. Hence, whilst the webfolio template format provided a scaffolded learning environment it did not work in the new context in which we had introduced it.

– **Reasons for learner attrition**

The first pilot ran in the ten weeks immediately preceding Christmas 2009; none of the learners completed the pilot. Some registered to study but did not get started; one learner stated:

“I seemed to spend all my time trying to get past the problems with the system rather than doing any work, which is why I gave up in the end because it was taking up too much of my time considering I wasn’t making any progress.”

(Employer S (also a learner), Pilot 1, end of project interviews)

And another that:

“The technical problems prevented me from making any progress.”

(Learner A, Pilot 1, learner feedback)

All those who completed some of the unit reported work pressures and the time of year as the primary reason for non-completion:

“Timing of the unit wasn’t good with the weeks before Christmas being the busiest in the year both in and out of work.”

(Learner Q, Pilot 1, learner feedback)

“[Most challenging thing about the unit] finding the time to do it.”

(Learner D, Pilot 1, end of unit evaluation)

- **Change formulation for next iteration**

As a result of the observations and evaluations from the first cycle a series of change interventions were introduced that resulted in a revised template design (Figure 5.6), improved learner support guidelines (Figure 5.9) and a method of recording and reporting learner engagement and achievement.

Alongside the results of the first cycle of the e-portfolio application I recognised that the University staff needed more support in their learning. I had put in place the e-portfolio advisor and the School-based e-mentors but this was for using the e-portfolio software. It became clear that more support was needed, for instance, principles for design of on-line learning were not followed (e.g. Beetham and Sharp, 2007; Jacques and Salmon, 2007; Salmon 2002 and 2003), there was a lack of awareness and understanding of key University procedures for instance validation and quality assurance of on-line learning. In addition to the learners needing support (scaffolding), tutors also need support, after all they are also learners because they are new to this developing pedagogy.

3.2.2 Cycle 2

- **The change intervention**

The format for the webfolio template was overhauled between the first and second cycle. In Cycle 1 we had used two types of blog; one to create opportunities for collaborative (group) activities (visible to the cohort) and another for individual comments and reflection and discussion with the tutor (visible to learner and tutor only). The blogs were easy for the learners to access and use so we developed a way the blog function within the software could be used to provide a space for learners to add their responses to activities set by the tutor. We also adopted a standardised appearance for the webfolios that would avoid the earlier problems of poor text visibility due to low colour contrast (Figure 5.6).

- **Observations**

- **The software needs to be easy to use/intuitive**

The blog-based template model provided a suitable learning environment and resolved a number of the issues identified in Cycle 1 (difficulties in using webfolio, problems with template colours, need to record individual learning

episodes). Content was also reduced to a guideline maximum of two web pages per topic with the focus on learner activities and sourcing on-line materials through e-journals, e-books and other web-based resources.

Feedback from the learners, directly through comments posted in webfolios, in unit evaluations and end of project interviews, and indirectly through engagement / completion statistics, showed a positive response to this format.

Examples of such feedback include:

“I am in fact very impressed with the format of the course.”

(Learner E, Pilot 2, learner feedback)

“Excellent course. The course content and the way it is laid out [are] wonderful. Easily accessible and really useful for me at this point in my career.”

(Learner 3, Pilot 2, mid-unit evaluation)

Additional guidance was developed for learners and for tutors. The learner guidance included step-by-step instructions, with images of the screen for each step. Even so, learners continued to have difficulties in accessing the webfolios. We could not identify a different ‘instructions-based’ approach, there was clearly an issue with the process that had to be followed, more detailed instructions did not make it more logical: our instructions needed more *affordance*.

“I think pebble pad was difficult, I was not always 100% sure what I was doing. At some point I think I got there more by luck than following the right track.”

(Learner P, Pilot 2, end of project interviews)

“PebblePad is not user friendly enough, and I'm getting increasingly frustrated with the problems accessing the course text - it seems to crash every 10 minutes forcing me to log out and back in again.”

(Learner 2, Pilot 2, mid-unit evaluation)

We spoke to the software provider to see if they could find a way to automate the steps the learners had to follow.

“Is auto-publish possible for webfolios so that we can remove this step from the learner process?”

(Note to myself recorded in my learning diary during Cycle 2)

An automated process was developed through which learners could confirm two questions (asked through ‘pop-up windows’ when they first log-in to PebblePad after registering for a module) to download the unit template to their personal account and to publish it to the gateway so that the tutor could view and comment on it (Appendix 1 - 3.3 and Appendix 11).

– **Individual records supports reflection and diachronic learning**

Using the blog-based approach means that learners can record, review and amend individual inputs. Each time the learner responded to an activity, commented on a group discussion or wrote in the personal blog the software saved each comment as an individual ‘asset’ within the learner’s personal storage area. Learners can edit each asset with additional comments, amend existing comments and delete the asset. The asset can also be hyperlinked into any other asset that the learner creates. This allows learners to, say, write a reflective narrative with links to individual items of ‘evidence’ to support their narrative. Learners can also review their comments over a period of time and reflect on their learning journey across that time. Activities within the weekly format included opportunities for learners to reflect on their learning and their other experiences. Early in their HE level studies the learners, and sometimes their employers, were identifying areas of improvement in their practice:

“I feel that this course has inspired me, and I seem to have gained more confidence in my abilities because I have greater knowledge and understanding of how the company works. I have lots of ideas and projects that I am involved in and my job just seems much more interesting and exciting.”

(Learner 4, Pilot 2, feedback from email correspondence)

“He is more assertive in how he sees the business being run, is able to back up his decisions with facts. Has developed a business plan based on some of what he has learned.”

(Employer T, Pilot 2, end of project interviews)

“I have learnt to critically appraise the company I work for as well as identify potential areas for improvement.”

(Learner 1, Pilot 2, mid-unit evaluation)

The creation of records of individual episodes of learning, in a variety of formats, was one of the key reasons we adopted an e-portfolio based approach (see Chapter 2, Background). In our pilot units learners are starting their journey in HE. The blog-based approach proved to be an effective model to introduce

learners to HE but I recognised that all HE level learning cannot be built solely on responses to blog-based activities and began to think about how the pedagogy could develop “beyond the blog”. My notes from the pedagogy development workshop state:

“Agreed that learners should be introduced to alternative functionality within PebblePad e.g. action planning, profiling tools, thought assets, meeting planner, CV builder etc to enable them to build a much richer e-portfolio but the most appropriate ‘tool’ should be determined by the unit tutor based on the learning required.”

– **The concept of ‘holistic scaffolding’ continued to emerge**

Learner experiences in cycle 2 continued to inform both the immediate pedagogic design e.g. the format of the template, the recording of learning episodes, the information, advice and guidance (IAGs) for students, as well as the structures and processes to enable that learning to take place and to be a worthwhile experience (Figures 5.6, 5.7, 5.9 and 5.10).

Typically our university systems and processes are set up for full-time and part-time students undertaking degree courses that take place over an academic year, as these make up the majority of our learners. The learners on this project do not fit this mould. Systems and processes needed to be adapted to enable the learners to undertake their studies. These systems need to be built around, and interrelate to, the pedagogy developed and not independently of it. An example of this was in the learner registration period which originally did not take into account the potential for a delay in starting study nor for an extension to the planned completion date. With traditional students the deadlines are not as critical because the academic year allows more flexibility than the short-term requirements of the bite-sized study through the ePPSME model. The amended learner identity created for these learners caused a range of issues around initial registration, enrolment and access to IT as well as early closure of learner IT accounts and hence loss of access to the learning environment. The following quotes are typical of the issues encountered:

“The underlying issue is that the system thinks that you are a past Student of the University, however, it also issued a new student number - thus you now have two identities (that’s sufficient to terminally confuse our registration systems).”

(Response to learner query by member of staff, email correspondence)

“I have tried several times to log on with no joy it does not recognise my user name.”

(Learner 9, Pilot 2, email correspondence)

In addition to creating new approaches to student identity we also had to develop additional quality assurance processes for this new model (Figure 5.7) whilst working, where we could within the existing processes. It became clear during cycle 2 that participants in the pilots were not aware of normal QA requirements, nor the application of those that we were developing as part of the project. Despite the fact that the University Guidelines for Flexible and Distributed Learning had been in existence for some years and were available on the University website, unit tutors did not know about them, nor that they applied in our project context.

We also had to raise awareness of Registry’s needs with regards to processing new curricula to ‘put them into the system’, so that learners could register for the units. I needed to make this information more accessible to the project team and also feed back to the University the lack of widespread dissemination and awareness. Within this project I broadened the tutor guidance to include details about the wider implications for curricula development as well as guidance on creating the learning units within the e-portfolio (Figure 5.9).

The workshop that I introduced as an additional team activity provided a forum to share experiences and disseminate information and project development activity. It allowed us to bring together a range of ideas and experiences that we used to inform the pedagogic development and to co-construct our learning. The workshop also served as a catalyst to support our evolving community of practice. All staff involved in the project now had a better understanding of the university systems and processes that they can use in their work, within and outside of the ePPSME project. One participant commented:

“Retreats are always good for sharing practice ... As a practice they are invaluable.”

- **Change formulation for next iteration**

The amended approach to the webfolio design in cycle 2 proved to be effective; cycles 3 and 4 did not need to involve any significant changes to the model. We concentrated our efforts on other aspects of the pedagogy, in particular improving the learner experience, facilitating the design and unit management

processes and verification of the emerging concept of what I termed 'holistic scaffolding'.

3.2.3 Cycle 3

- **The change intervention**

In cycle 3 we planned to improve the emerging model to try to ensure that it would be sustainable, scalable and cost-effective. We looked at ways we could provide better support and guidance for tutors developing new units and ways in which tutors could easily collaborate with others on unit development.

- **Observations**

- **The software needs to be easy to use / intuitive - for tutors as well as learners**

The provision of templates to support the creation of new units, a tutor support webfolio to give guidance on design considerations, quality assurance and validation, shared PebblePad accounts for collaborative working and school specific gateways (repositories) to house webfolio templates and learner webfolios, provided solutions to some of the problems of unit management.

"[PebblePad webfolios] are easy to maintain and run once the development work is done."

(End of project interviews with e-mentor 2)

- **The concept of 'holistic scaffolding' continued to emerge**

As part of the QA process and to support on-line tutors in recording learner success in the ePPSME units we designed a process, using a spreadsheet template, which can be stored in the relevant gateway and be archived with the record of the learner webfolios. This provides further structure for the academic in facilitating access to the learners' previous work and allows the University to meet QA requirements for maintaining records for monitoring purposes.

"[The] spreadsheet used for recording learner progress on pilot unit 2 introduced and explained. Agreed could be used for all units and archived for QA purposes."

(My notes from Pedagogy Development Workshop)

"Tutors will monitor student engagement with the weekly activities and assess how 'much' they have done each week, using a spreadsheet template. Around weeks 5 - 7 learners will be told they need to do more to pass, if appropriate, and will be reminded around week 8/9 if they haven't done enough and that they will fail if they don't 'catch up'."

(Email correspondence from me to QA department)

- **Sometimes learners will follow their own path**

Despite our encouragement, with reasons, for correspondence with learners to be within the webfolio where possible, unit tutors continued to use other methods such as email and telephone. Whilst the webfolio allows records to be maintained within the learner's 'assets store', so that they can be easily referred to, we recognise that what is most important is that there is dialogue between the learner and tutor, where this is needed, and that to change preferred methods of communication requires a change in culture for both tutor and learner. This is an aspect that needs to be developed further in future and we can look to develop existing tools within the software to further encourage communication, or at least recording it, through the e-portfolio.

- **Change formulation for next iteration**

In cycle 4 we planned to consolidate our understanding of our earlier findings.

3.2.4 Cycle 4

- **The change intervention**

The primary work in cycle 4 was the fourth pilot unit in which we tested the effectiveness and appropriateness of the e-portfolio based pedagogy. Within this unit we introduced the approach to a "patchwork text" assessment (Scoggins and Winter, 1999; Winter, 2003) that had evolved through the design development retreats and workshops.

- **Observations**

- **A patchwork text approach to summative assessment can be adopted**

Feedback from the tutor and learners suggest that this is an effective and appropriate method but further work will be needed on developing this through other units and in the summative assessment in the module which brings together the learning from the ePPSME units.

- **Our planned pedagogy may not fit the needs of every subject**

A lot of additional work went into market research with Care Homes and in liaison with subject specialists in the School of Health and Wellbeing (SHaW) to draw out common learning needs that would inform curricula design within the proposed pedagogy. The work undertaken did not lead to the identification of learning needs that could be developed into 5-credit units. Within the project we were only able to look at a limited number of subject areas. What this experience showed was that the pedagogy would not, necessarily, be suitable

for all subject areas across the University and that we needed to be mindful of the context in which we were developing this WBL model. Feedback from the academic lead in this school can be summarised as:

“The [PNA] report [from interviews with care providers] that was produced did not provide us with any particular focus and within our feedback meeting it became apparent that the [interview] team did not have the insight into the target group needed and the data provided was not detailed enough to perform a LNA.”

“The area which might have been most amenable to this approach is CPD [and we think] that the 5-credit model will fit best with those bespoke programmes.”

“We feel that we made however a valuable contribution to the project in that SHaW is one of the largest Schools and draws in funding mainly from non-HEFCE sources. Our potential markets are therefore important ones to model in this kind of project.”

4 Results observed from change management processes

4.1 The change management processes

The project management structure (Figure 4.5) was created to involve all identified key stakeholder groups in the AR. The change management processes introduced through this structure were intended to ensure that the AR was participatory. This section presents the observed results from adopting that approach and how it impacted on the AR.

4.1.1 Involving key stakeholders ensures maximum internal impact

Across the Steering Group, Project Team, AR cycle participants and participants in design retreats and workshops we included all the key internal stakeholders. This ensured that the pedagogy we developed could be integrated with and supported through all university systems and processes. The Pro-Vice Chancellor (Academic)’s involvement ensured that University Executive were kept informed of the project progress and outputs and that they were able to facilitate change within their own areas of responsibility across the University.

4.1.2 Lack of direct contact with stakeholder groups may impact on their involvement

My original management structure included representation from employers and work-based learners. Unfortunately I did not have direct contact with these two stakeholder groups and was unable to include them, directly, in the action

research cycles. My original plan was that the project team would work with known local employers to undertake market research, identify learning needs, co-design learning and recruit employees as the learners. In reality this market research, and consequently the direct link with the employers, was undertaken by a subsidiary organisation and despite repeated assurances that representatives from the two stakeholder groups would be recruited we did not achieve this. In addition, the research approach was adapted in the first cycle to accommodate the availability of interview data (Chapter 5) which resulted in employers and learners not being directly included in the design process. Employer and learner voices had to be ‘heard’ through the unit tutors and in the semi-structured interviews. This was not ideal. What I wanted to achieve was a tri-partite approach to the pedagogic design; the indirect involvement of these key stakeholders could be seen as a limitation in the project.

4.1.3 Choice of participants will impact on project success

The method of selection, choice of and remit for unit tutors and e-mentors was appropriate and successful. There were one or two changes to the tutors and mentors during the project but this did not have a detrimental effect. Two of the unit tutors were changed because the subject expertise needed for the learning outcomes identified through the SME interviews was different to that anticipated at project start-up. The changes required more input from both the e-portfolio advisor and me in bringing the new participants up-to-date and consequential repetition of some aspects of our work.

4.1.4 Planned roles may need to change to suit emerging events

The role of the e-mentor varied across the different pilots with some taking a significant amount of responsibility for developing the learning materials in the e-portfolios through to others who had a very minor role. The e-portfolio advisor was closely involved with the development of the webfolio templates for all the pilots and for supporting the development of the e-mentors who did not always have the anticipated e-portfolio skills needed for the emerging pedagogy.

4.1.5 Design retreats and workshops are effective tools to support action research

The design retreats and pedagogy development workshops held at key stages in the project proved to be an effective method through which to engage the project participants. Prior to each event I clearly defined the outcomes and

activities and these supported the participative action research approach and provided a dedicated space to stop, think and create (Appendix 1 and Appendix 2 - Web resources).

5 Evaluation of findings from learner and tutor journeys

Learners and tutors reported different experiences and provided different views of their learning across the four pilot units. Learners in the first pilot tended to find that difficulties in accessing the learning (in obtaining an IT account and in understanding how to access the webfolio templates) often prevented them from undertaking or continuing their studies. The timing of the unit (completion in mid-December) caused significant difficulties for work-based learners who have many other commitments (at work and home). The reported frustration with factors outside their control appears to have influenced completion rates and impacted on learners continuing their studies further. Where learners did access the learning content for the first pilot many reported that it was easier for them to print the materials and work on hard copies but this, in turn, impacted negatively on their engagement with the e-learning environment. The learner experiences from the first AR cycle (pilot unit 1) resulted in the most significant impact on the pedagogic design, as outlined in Chapter 5, Project Activity.

Through each pilot we were able to refine and improve the pedagogy so that learners were able to concentrate their efforts on engaging with the learning and assessing the e-portfolio-based pedagogy, rather than seeking ways to access their learning. Feedback and evaluation from pilots 2, 3 and 4 show a far greater access to and engagement with the unit content and learning activities with many reporting positive impacts on their workplace as a direct result of their studies. Anecdotal evidence from tutors, supported by learner feedback, suggests that some learners wanted to continue their studies with subsequent 5-credit units. Other feedback showed that learners had recommended the unit that they had studied to colleagues. Two learners from the fourth pilot had, as a result of their positive experience on the unit, chosen to enrol on a Foundation Degree course (with another local university).

Tutors also benefitted from their learning experiences on the project and reported changes that they had made in their other lecturing work, as a direct

result of these. Central to their learning were the experiences from the design retreats with two reporting:

“[The] retreats have given me the space and motivation to change my approach to learning and teaching.”

(Unit tutor X, comment made post project)

“The design retreats gave me a marvellous opportunity to rethink my resources and pedagogy. [This project] has transformed my approach to curriculum design.”

(Unit tutor M, comment made post project)

A common theme in the anecdotal feedback from the tutors was the application of the principles of constructivism and social constructivism in their normal teaching practice and the benefits to the learners (and the tutors) of supporting and enabling this. At least two tutors reported a significant increase in the active learning that they include in their teaching practice and a move away from a predominately didactic mode of delivery.

We were able to learn from both successful and unsuccessful experiences reported during the AR cycles and see benefits in our own practice and in the opportunities accessed by the learners.

6 Informing ideas and emerging findings

In my literature review and earlier discussions I identified key informing ideas that impacted on the design and development of the e-portfolio based pedagogy. These informing ideas are summarised in Figure 6.3. Our pedagogy is one where we are adopting the principles set down by Simon (1981) and by Coussard, Pryor and Torrance (2004) i.e. one that provides an inclusive environment, is modifiable by individuals and that provides opportunities to learn. In addition we were cognisant of the accepted need for scaffolded learning (e.g. Wood, Bruner and Ross, 1976), and in particular, instructional learning (Lipscomb Swanson and West, 2004) in relation to supporting learners moving through a ZPD (Brill, Kim and Galloway, 2001). We also recognised the importance of reflection as part of learning and the role of diachronic learning (Currant, 2010) as an essential element in reflection. Bartlett-Bragg (2003) presents the notion of ‘footsteps in the desert’ as a way of seeing the journey someone has undertaken.

The three domains we created within the unit webfolio templates were founded on those required for a successful community of inquiry and for text-based communication (Garrison, Anderson and Archer, 2000 and 2011). The domains were created through our use of blog-based activities: responses to content-based activity, personal and social/group (e.g. Drexler, Dawson and Ferdig, 2006, Ferdig and Trammell, 2004, and O'Donnell, 2006).

The use of an e-portfolio as the learning environment was a type of technical scaffolding (Yelland and Masters, 2007) and as we progressed through each AR cycle we recognised the importance of procedural scaffolding (Rourke and Coleman, 2009) as an essential element for the pedagogy. Examples of procedural scaffolding that we developed during the cycles include the learner support webfolio (Figure 5.9), tutor guidance webfolio (Figure 5.10) and the diagram showing the relationship between units and modules (Figure 5.7).

Underpinning our approach to pedagogic design was the principle of social constructivism (e.g. Biggs and Moore, 1993, and Lave and Wenger, 1991).

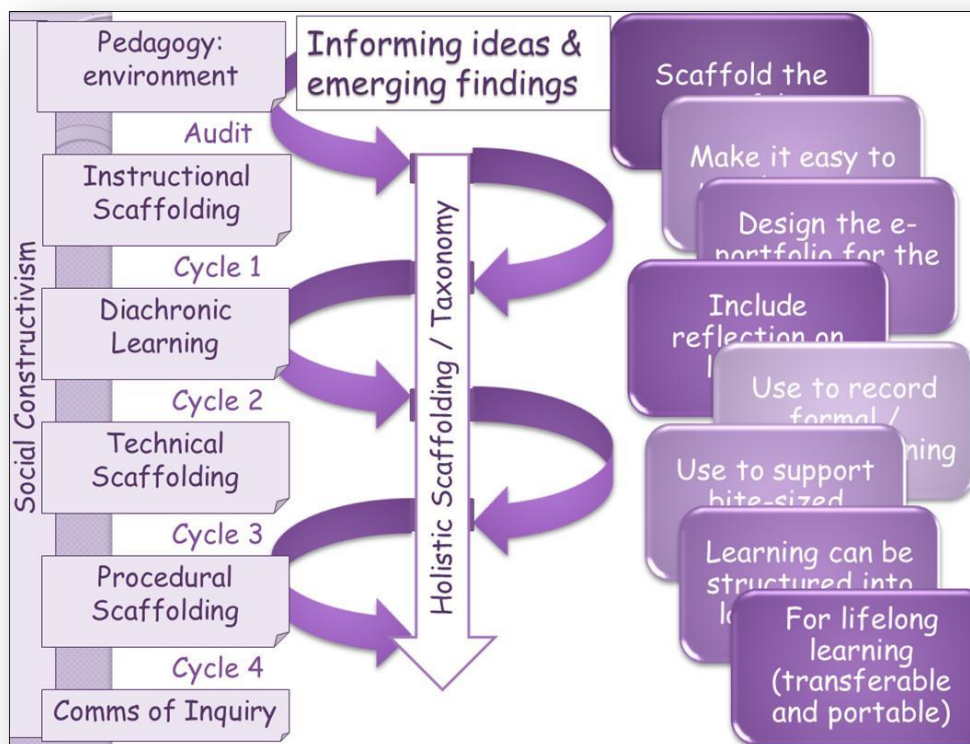


Figure 6.3 Informing ideas and emerging findings

The findings that began to emerge from my analysis of the observation data led me to start to conceptualise the essential elements of our pedagogic design. I also began to recognise that different types of scaffolds were needed by different learners and that the scaffolding needs changed at different stages of learning.

In the following section I identify the themes that began to emerge from the observational data and in the subsequent section I explain my concepts of a scaffolding taxonomy and of holistic scaffolding.

7 Research findings and pedagogic principles

The emerging findings presented above enabled me to identify the themes that I saw within the data; for instance: the software needs to be easy to use, context-sensitive scaffolding needs to be provided, individual records support reflection and staff as well as learners need to be supported in their learning. I needed to find a way to present these themes that would both explain my findings and that would present the grounded theory that had emerged. In addition, I wanted to make my findings informative to others and one of the JISC requirements as a deliverable for the project was:

“Guidance for other institutions on carrying out similar innovations.”

(JISC, 2008, p9)

In my literature review I reported on the Teaching and Learning Research Programme’s principles for designing effective pedagogies (TLRP, no date b and James and Pollard, 2011) and I looked at how these had been adapted to different contexts, such as HE level learning (David, 2009) and workplace learning (Brown, 2009). The work conducted by TRLP was drawn from longitudinal research and the principles were developed from the data collected. I found this to be a useful way to present such research findings and examined my data and the emerging findings to see if I could also extrapolate key principles for my pedagogy from the themes that I had identified.

Drawing together the developmental findings from the AR cycles and the emerging findings presented in this chapter, I identified two propositions about the potential of an e-portfolio to be used in this context and eight key principles for my e-portfolio based pedagogy for work-based learners in small to medium

sized enterprises (Appendices 1 and 2; see also Felce and Purnell, 2011). A brief explanatory note is given for each proposition and pedagogic principle.

7.1 Propositions: e-portfolios for work-based learners in SMEs

a. An e-portfolio based pedagogy can be used for work-based learners

The project has shown that an e-portfolio based pedagogy can be used to meet the needs of work-based learners and that, appropriately designed, it will support learners in recording and reporting their learning over a period of time. In common with other learners, those in our target group need to be provided with a structure that scaffolds their learning and that enables access to that learning without creating unnecessary barriers or constraints.

b. An e-portfolio can support assessment through a patchwork text methodology

Within the pilots that we undertook for the ePPSME project we were not able to test the pedagogy to bring together a number of units into a credit-bearing module that is summatively assessed. However, we did develop the principles for doing this and the quality assurance and validation processes for a learner to build units into modules. At the end of each unit the learner is asked to provide a short narrative that will show how the learning outcomes covered have been achieved, and if appropriate, applied in the workplace. Where a learner chooses to register for a 20-credit module, and brings together the learning in completed units, a summative assessment task will be set to draw the learning across the units together, using a patchwork text methodology (Winter, 2003; Scoggins and Winter, 1999).

7.2 Key pedagogic principles for the e-portfolio based pedagogy

1. The e-portfolio needs to be scaffolded

The benefits of providing structured learning experiences have long been recognised (for example Wood, Bruner and Ross 1976), particularly when learners are new to study and need guidance in moving from being dependent learners to independent ones. This applies equally to the learners on the units as well as the tutors and e-mentors who are entering a new field of pedagogic design. The primary structure was from a webfolio template which provided a familiar environment, in that it appears as a webpage, through which the learners accessed the unit content and typed their responses to activities set. Each webfolio is made up of five elements:

information about the unit, learning content, individual activities, a group blog for group activities and space for 1:1 conversations with the academic tutor. Scaffolding for the academics was provided through sample webfolios and the Tutor Design Guidance Webfolio.

2. Build in opportunities for reflection on workplace learning

One of the reasons we proposed the use of an e-portfolio was its potential to enable the development of a reflective approach to learning. We supported the learners in starting to transfer their learning from work into HE and from HE into work by structuring the learning activities to encourage them to reflect on how their work practices related to the unit learning and how one could inform the other. Dialogue with the tutor and the peer group was used to encourage a deeper approach to learning and to start to develop more independent learners. By including opportunities to reflect on learning and to draw on workplace experience we aimed to further support the learning by building their confidence through helping them recognise their existing informal learning and tacit knowledge.

3. Design the e-portfolio to meet the context in which it is to be used

We needed to make sure that the technology we used and the way we used it met the needs of the target learner group. In the first two pilots we provided a telephone helpline and later developed an on-line Learner Support Webfolio. A planned development is the creation of an additional narrated Captivate video which is written for a learner “audience”.

4. Design the e-portfolio to be easy to use / intuitive

We anticipated that learners in our target groups would have limited experience of using computers and might lack confidence in their use. The webfolio format provided a familiar environment for the learners as it appeared as a webpage and required the learners to interact with it in similar ways to common webpages. Learners only need to access the software to open their webfolio in ‘view’ mode and so are not deterred by trying to learn how to use a new and unfamiliar application. As we start to develop other units in a series we are building in a wider range of functions in the PebblePad software to scaffold the learners’ use of it to work towards full interaction and the competence, and confidence, to build their own webfolio.

5. Make use of the e-portfolio to record formal and informal learning experiences

An e-portfolio tool can be used to record any and all aspects of a learner's experiences; formal and informal, past and current, lifelong and life-wide. As our learners gain in competence and confidence in their use of the software they will be supported, through scaffolded learning opportunities, to populate their asset store (an 'experiences repository') with records of and reflections on their experiences. The learners will be able to build a rich and deep personal learning record that can provide evidence of the achievement of specified or negotiated learning outcomes.

6. An e-portfolio can be used to support learning in 'bite-sized chunks'

We developed the pedagogy to support short courses (50 notional hours of learner effort) that could be designed to meet identified employer and learner needs. We wanted the courses to be available at a time to suit the learner and to fit in with workplace and other demands. The e-portfolio environment allows learners to build their learning over a period of time and to re-enter their personal learning space throughout their lifelong learning journey. Access to and interaction with the University's virtual learning environment is time-restricted and does not allow the learner to record and keep private personal reflections and learning records.

7. An e-portfolio can be used to structure learning into larger awards

The learner can choose to study one 5-credit unit, or a series of 5-credit units, and combine these into modules and build modules into awards. The e-portfolio provides the flexibility for a learner to record his episodes of learning, both formal and informal, and return back to them and build on them at a time to suit himself. Our pedagogy has proposed a patchwork text methodology to support the learner in building learning within an individual unit towards a summative assessment in 20-credit blocks. At the end of each unit a learner summarises his learning, its application in his work context and any change of practice that has resulted. A learner who completes a 20-credit module will bring forward the learning from the individual units through a final reflective summary.

8. An e-portfolio can be used for lifelong learning (it needs to be transferable and portable)

Learners on our units may choose not to continue their studies with the University, they may change employers or link with professional bodies so we needed to ensure that the learning can move with the learner and it needs to be capable of transfer between systems. A learner can export her e-portfolio into a format which can be viewed but not altered, so it is portable; and she can export it into another Leap2A compliant application, making it transferable.

In order to validate my propositions and pedagogic principles I conducted a report-and-respond enquiry (see Chapter 4, Methodology) through an anonymous on-line survey to a range of e-portfolio networks. I presented the principles and statements given above and asked for comments to be made against each statement. In the following section I present a representative sample of comments from the responses received. A full set of responses is given in Appendix 7.

7.3 Validation of findings through report-and-respond enquiry

All respondents concurred with the statements made and the explanatory notes given. Most respondents qualified their agreement with additional commentary to explain their view or to expand on my explanatory notes.

- a. An e-portfolio based pedagogy can be used for work-based learners

“I would agree with this statement. My one concern would be over the robustness of the technology supporting this as technical issues can undermine such pedagogy and seriously frustrate/turn off students.”

“Work based learning can be a demanding and challenging area for mature students. Having the work structured and allowing students to work formatively to a specific goal, helps the students develop vital skills, while giving them the support they need. I find that any learning which has support and a strong foundation will increasingly benefit the students. The e-portfolio based pedagogy allows this with the constant support of the students’ teacher.”

- b. An e-portfolio can support assessment through a patchwork text methodology

“I feel that the patchwork methodology allows students work in variety of different units, but with the advantage of bringing them together to complete a summative assessment. In my experience this has worked very well with students who use an e-portfolio as part of their assessment. Collecting and creating a variety of different materials, but then ‘stitching’ them together to make a final piece.”

“Agree. Using patchwork text ensures at a basic level that the final assessment address the learning outcomes of the module as a whole. The learner can see a benefit and a value to completing the previous formative assessments, which in themselves are not credit bearing. Given the multimedia nature of e-portfolio a move to Patchwork assessment that could be more than text in nature would be good for the future.”

1. The e-portfolio needs to be scaffolded

“I’d agree that scaffolded e-portfolios are beneficial and support and aid students learning. Offering the students a ‘blank canvas’ with no structure can be intimidating and result in students dissociation with the learning outcomes as struggle with coming to terms with using the platform of delivery.”

“The pedagogic principles underlying the e-portfolio based approach appear to be based on evidence from research. Providing support materials, content, activities and tutor access all from one location removes one of the major barriers to learning: having to engage with a programme of learning via multiple access points.”

2. Build in opportunities for reflection on workplace learning

“Reflective learning is what differentiates work-based learning from work experience and work placements. There is also a well-researched link (Schön) between being a reflective practitioner and an effective practitioner. It would have been disappointing if this was not embedded in the e-portfolio pedagogy.”

“e-portfolios are ideally suited mediums to allow students to reflect on theoretical, classroom based study and work based practice experience. By their nature they provide flexible access (online and mobile) and can be shared online to allow reflection within peer groups. This would not be possible or as easy with traditional paper based submissions.”

3. Design the e-portfolio to meet the context in which it is to be used

“Any supporting materials which aids users understanding and adoption of e-portfolio systems are valuable. However the very best aid to student learning and understanding of e-portfolios is practice. Initial training and supporting instructional media are necessary to support the learner’s continued student use of the platform.”

“Important that learners always know there is someone there, even after online support is available. Walk through videos are a great additional support mechanism catering for visual learners and also to provide a more real life experience of tasks.”

4. Design the e-portfolio to be easy to use / intuitive

“I use the same approach across a number of differing courses and find it a hugely successful model of adoption. The gentle introduction to the ‘front-end’ of the e-portfolio system builds user confidence before the possible use of more challenging aspects of the system’s user interface.”

“I feel that new initiatives like this must take ‘baby steps’ and it is very much apparent that this project is using this technique to build a strong foundation for its students. A new course, being back in education and using a new piece of software to complete your studies is a very daunting prospect for new students. Having the webfolio in a simple view mode to complete the work is very effective. It means the students can concentrate on the content rather than then the delivery.”

5. Make use of the e-portfolio to record formal and informal learning experiences

“I feel that this statement outlines what potential the webfolio offers. It means that the students are supported in their development and the software will enable students to be lifelong learners, as they can update their ‘experience repository’.”

“Agree and can add that the ability to record all aspects of learning proved to be a very useful tool in terms of development and reflection.”

6. An e-portfolio can be used to support learning in ‘bite-sized chunks’

“Students that work part or full-time and have the responsibilities of supporting a family need flexible learning models. e-portfolios can facilitate this and allow for ‘24/7’ asynchronous engagement with their course material.”

“I think this is a transferable and easily adaptable model to use across contexts. The ability to export episodes of learning supports the stitching together of bite sized learning.”

7. An e-portfolio can be used to structure learning into larger awards

“Flexible modes of study, delivery and assessment are vital to 21st Century education in HE. The opportunity to build towards larger awards by studying smaller manageable units will enable more people to access HE.”

“Again agree but would point out that the incorporation into larger awards has the potential to be tricky due to the inflexibility of the target institution’s systems.”

8. An e-portfolio can be used for lifelong learning (it needs to be transferable and portable)

“With the commodification of HE continuing at great pace, the customer needs must be considered. There is the potential for students to ‘cherry pick’ institutional modules, changing to suit educational need. The e-portfolio platforms capabilities to export learning materials from HEI to HEI, in support of this, is paramount.”

“Being able to transfer the information in an e-portfolio is important only if you believe that the e-portfolio belongs to the learner and not the institution. I don’t disagree that an e-portfolio should more with the learner, but I’m uncertain whether learners themselves have shown any real interest in having a ‘lifetime’ record of their experiences.”

The responses received from the report-and-respond enquiry provide a form of validation for my propositions and pedagogic principles and show that others can relate their own experiences to my interpretation of my data. I discuss the validity and trustworthiness of my findings further in Chapter 7.

The propositions and the pedagogic principles were reported to JISC through the Final Project Report (Felce, 2011; Appendix 1) and to the wider academic community through a journal paper (Felce and Purnell, 2011) and they represent the project findings at the completion of the JISC funded project. However, in writing up my thesis I have had time to reflect on my research, my data analysis and the “interpretive products” I had previously reported. I realised that an overarching concept had emerged from my research; I have called this concept “*holistic scaffolding*” and I explain this in the following section.

8 Holistic scaffolding and a scaffolding taxonomy

My research has shown that a structure to support learners, which in my research is facilitated through the use of an e-portfolio tool, also needs to be available to others involved in learning and teaching developments i.e. tutors, academic staff, middle managers / internal policy makers, senior managers / external policy makers.

Analysis of the change management process I introduced, the structured learning opportunities provided through the retreats and workshops and guidance for tutors and other members of staff in designing and supporting learning and

learners in this new model of delivery show the value of support provided through context-specific scaffolding to all involved in pedagogic developments.

Some examples of data that support my view are:

“Noted that this project has involved a range of support departments within the university including Registry, IT Services, Learning Information Services and the Quality and Academic Standards Division. New processes and procedures for on-line student registration, module and unit validation and learning pedagogy have required innovative approaches and ‘work-around’ solutions to software applications and procedures that have been developed for different student needs. Issues have arisen at various stages throughout the project but these have been successfully resolved at each stage.”

(Interim Progress Report to JISC during Cycle 3)

“The importance of a whole systems approach to introducing a new pedagogy and the need to involve senior management from all key departments.”

(Interim Progress Report to JISC during Cycle 3 - Lessons Learned)

“For the units to work seamlessly, there is a need for the co-ordination of all parts of the University - Registry, IT and schools.”

(Feedback on Retreat 3, anonymous)

“e-portfolio is a “powerful learning environment”; attention to pedagogy is only part of it, need to consider all aspects e.g. costing, agility etc.”

(Comment from external representative at Steering Group Meeting in Cycle 3)

Thus I developed an expanded model that I have called **Holistic Scaffolding**. As was stated earlier, the propositions and pedagogic principles outlined above address the needs of the work-based learners in SMEs. However, in order to enable the introduction of the new pedagogy and to embed it within the wider University I found that we needed to provide scaffolding throughout the organisation. This scaffolding is holistic because it embraces all university functions and departments and all personnel within them. I have identified five different types of learner that need to be supported through a holistic scaffold:

1. The student
2. The tutor
3. The curriculum designer
4. Middle management / systems and processes
5. Senior management / executive and policies

Within my model I have identified a **taxonomy of scaffolding** that represents a view of scaffolding needed at different stages to achieve learning when moving through a zone of proximal development, ZPD (Brill, Kim and Galloway, 2001).

Earlier in this chapter I discussed different types of scaffold required to support learning e.g. instructional, technical and procedural. In Chapter 3 I presented findings from research that posited, inter alia, that:

“novices and advanced beginners require more learning support and scaffolding which decreases as they become more expert.”

(Kaider, Henschke, Richardson and Kelly, 2009, p497)

Scaffold can be replaced with a *“new structure for more elaborate construction”* once learning is secure.

Cazden (1979, p11, cited in Smagorinsky and Fly, 1993, p168)

“whensupports are removed the learning needs to be secure.”

(TLRP, no date b)

In Chapter 3 I also drew an analogy with different types of scaffolding in the construction industry, used at different stages in the construction process e.g. dependent constructor's and birdcage scaffolding, mobile scaffolds, ladders and steps. These different types of scaffold provide varying intensity in their support for construction and reflect the decreasing need as the building becomes more complete and therefore more stable. In my taxonomy of scaffolding I use the analogy of these different types of construction scaffolds to represent the different intensity of support required by learners to scaffold their learning at different stages in their journey.

My taxonomy of scaffolding applies within and across each type of learner within the holistic scaffold and which consists of five levels of support (Table 6.2).

Scaffold	Purpose	Learner characteristics	Construction analogy
Dependent constructor's (Figure 6.4)	Major support framework; provide detailed structure and guidance	New to this pedagogy; high level of dependence	Surrounds new building; provides access and primary means of support of building frame and roof
Birdcage (Figure 6.5)	Significant support	Increased learner independence;	Within a building; provides access to install services and ceilings
Platform / mobile (Figure 6.6)	Moderate support framework;	Growing familiarity with pedagogy, systems and processes; Learner adapting practice to suit own preferences and approaches	More agile than birdcage; speedier access provided
Ladder (Figure 6.7)	Light touch support;		Local support and access to construct final elements of building
Steps (Figure 6.8)	Minimal support; very limited structure and guidance	Independent learner, familiar with pedagogy	More agile than ladder; very local access

Table 6.2 Taxonomy of scaffolding



Figure 6.4 Dependent constructor's scaffold. (Source: <http://www.flickr.com/photos/63974928@N00/70576979>)



Figure 6.5 Birdcage scaffold. (Source: <http://www.flickr.com/photos/26113301@N06/4538767655>)



Figure 6.6 Platform/mobile scaffold. (Source: <http://www.flickr.com/photos/7888746@N08/1205035422>)



Figure 6.7 Ladder. (Source: <http://www.flickr.com/photos/29233640@N07/2829173159>)



Figure 6.8 Steps. (Source: <http://www.flickr.com/photos/33953253@N00/3100661311>)

In order to provide an example of how the taxonomy of scaffolding can be applied in practice I have expanded the first stage: dependent scaffold (Figure 6.9). Pedagogy could be seen as relating specifically to teaching and learning but my project has shown that pedagogy should be seen as much wider than this. Whilst learning and teaching form a central core a pedagogy must also encompass the wider picture for a novice learner. For our learners this includes aspects such as access to IT Services, the need for tutor support, information, advice and guidance for students, appropriate quality assurance, learner induction and so on. In the early stages of a new learning experience complex and wide-ranging scaffolding needs to be provided, on which the learner will be dependent. As a learner becomes more familiar with the new environment the

scaffold that provides the pedagogic affordances can gradually be reduced and adapted to the changing learner needs.

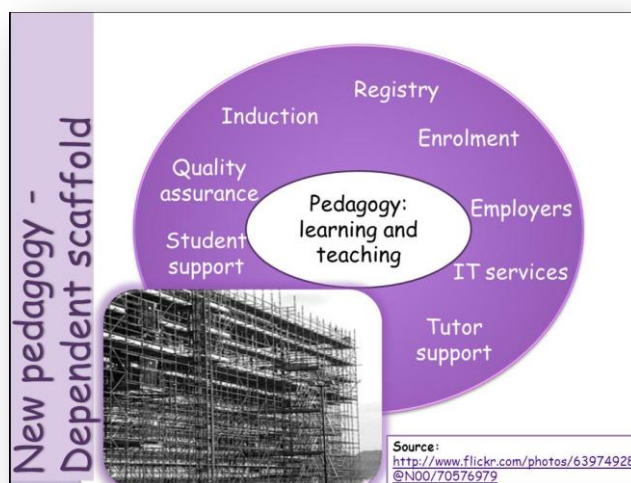


Figure 6. 9 Taxonomy of scaffolding: dependent scaffold

9 Conclusion

This results chapter has presented what I consider to be the “*trigger events, turning points, and critical milestones*” (Sandelowski, 1998, p379) that emerged within each cycle and from the change management process that I led as a project manager. I have used examples of data to illustrate the emerging “*interpretive products*” and presented the propositions and pedagogic principles I extrapolated from my data analysis. In the final section I introduced and explained how my concept of holistic scaffolding emerged and the taxonomy of scaffolding associated with it. I have tried to minimise my discussion within this chapter to the essential explanation of how my research findings emerged. In the following chapter I will discuss my findings in the context of the literature review presented in Chapter 3.

Chapter 7 Discussion of Findings

1 Introduction

In Chapter 6 I presented my eight principles for an e-portfolio based pedagogy and my concept of holistic scaffolding with its associated taxonomy. I explained, through examples of my data analysis, how I had determined my “*interpretive products*” (Sandelowski, 1998, p377), in other words how I “*used the data to generate ‘a truth’.*” (Chapter 4, p104). In this chapter I will discuss my research findings in the context of my literature review (Chapter 3).

I have chosen to present my discussion in a similar order to my presentation of the literature review hence I start with the broader concept of pedagogy before moving my discussion to the design of the on-line learning environment including scaffolding and reflection. Next I discuss my concept of holistic scaffolding in relation to key points in my literature review.

I then revisit my project objectives and summarise how they have been achieved and evidenced within this thesis and in the penultimate section I consider the project limitations. In the final section I reflect on my learning journey through my doctoral studies.

2 Is my e-portfolio based pedagogy an effective pedagogy?

In my literature review I posited the need for the emphasis in pedagogic design to be placed on “*an inclusive environment that can be modified to meet individual needs and that is mindful of, and applies, principles of providing opportunities to learn*” (Chapter 3, p28) which summarises the views expressed by Simon (1981 cited in James and Pollard, 2011, p276) and Coussard, Pryor and Torrance (2004). Has my e-portfolio based pedagogy achieved these overarching principles? In the pilot units that we ran through the four AR cycles we found that the environment was an inclusive one because a wide range of learners based in work were able to access it. There were limitations recognised due to the differing IT competencies and capabilities of the learners, access issues due to software / hardware specifications and preferences for face-to-face models of learning.

“It would be more comforting to me personally to be able to ask questions face to face on a daily basis as I sometimes misinterpret questions very easily.”

(Learner 1, Pilot Unit 1, Mid-unit evaluation)

“We have a preference for sending employees on face to face courses and this is also the model of our in-house training. For this reason we would be unlikely to invest in e-learning for management training.”

(Employer feedback, End of project evaluation)

Despite these limitations learners are able to modify the environment to their individual needs:

- At a very basic level the appearance of the webfolios (colour, font size etc) can be personalised to meet individual requirements (particularly important for sight-impaired learners)
- Learners can modify their access to the environment to different times of day, different days of the week, through computers at work, at home or elsewhere and through mobile devices
- Learners can negotiate a personalised combination of units to construct bespoke learning that meets each individual’s needs (this is achievable in the developed model, although it was not ‘tested’ in the project)
- The model provides opportunities to learn that are supported by structured content, activities and discussions with clear identification of anticipated learning outcomes within each 5-credit unit
- Learners can choose when to study each unit (with some limitations e.g. achieving a minimum number of learners before a new cohort commences) to fit in with their learning needs and time to access their learning.

We considered the option of designing independent on-line learning where learners could progress at their own rate, independent of a cohort, but this would remove the opportunity for collaborative and network learning which are recognised as important elements of pedagogy (Smagorinsky and Fly, 1993; Clifford, 1999). However, the model does allow learners to progress independently from their peers within a cohort, if they choose.

Thus, my model for an e-portfolio based pedagogy provides the environment that I sought to create, but is it an effective pedagogy? To consider this I turn to the TLRP principles for designing effective pedagogies (TLRP, no date; James and Pollard, 2011; David, 2009 and Brown, 2009), see Table 3.1, and I present

my assessment of how my pedagogy meets each of the ten principles in Table 7.1. Based on this assessment I consider that my e-portfolio based pedagogy is an effective pedagogy.

The one area that my assessment identified where my project work does not fully meet recognised needs for work-based learning is in the involvement of employers (Thérin, 2011; Ferrell, 2011). Employers were involved in the identification of the organisations' performance needs and in the evaluation interviews but only indirectly in the development of the model and with little involvement in development to support learners. However, Nixon et al (2006), in their research into characteristics of WBL provision, found that successful models include those where the learning provider takes the major role in identifying needs and providing learner support.

	Principle (summarised)	My e-portfolio based pedagogy
1	Equips for life / engages with individuals' broader life goals	Learners can negotiate study to meet individual and organisational needs and aspirations
2	Engages with valued forms of knowledge and workplace expertise	Principle theories and best practices presented as content but given equal value to knowledge that learners bring with them from their experiences; support given in helping learners to recognise this
3	Recognises importance of prior experience and learning	Learners supported in reflecting on their own experiences and practices through structured learning activities and assessments
4	Requires scaffolding / systematic development	Structured activities, use of template webfolios, opportunities for formative and summative assessment, learner information, advice and guidance are provided
5	Assessment congruent with learning / timeliness of feedback and support	Patchwork text approach enables learners to complete formative activities on which they receive timely feedback and that lead towards summative assessment
6	Promotes active engagement of individual as learner	Focus is on individual engagement with weekly activities and regular group discussions; opportunities to share experiences and understandings with tutor and peers
7	Involves individual and social processes and outcomes	Model is built around weekly individual activities and regular group discussions
8	Recognises significance of informal learning	Learners are encouraged to reflect on their own experiences and to apply new knowledge to their understanding and practice
9	Depends on learning / research / development of all those who support learning	Tutor support webfolio created to introduce unit designers to the pedagogic principles and learning design protocols; all relevant support departments involved in the pedagogic development. In general, employers have not been directly involved and this is recognised as a limitation on the pedagogy.
10	Requires consistent policy frameworks / diverse students / individual development / organisation performance	Pedagogy is supported through development of systems and processes and new protocols for use within the University. Pedagogy is accessible to a wide range of learners and learning can be negotiated to meet individual and organisational needs.

Table 7.1 Alignment of my e-portfolio based pedagogy with TLRP principles for effective pedagogies

If I consider the characteristics presented by Nixon et al (2006, p43, Figure 3.1) my pedagogy fits within each identified continuum, and by considering where my pedagogy lies on each continuum I can see a spread across the different characteristics (Table 7.2). However, this spread does not necessarily indicate that my provision will be successful because Nixon et al (2006) were not able to draw conclusions about the optimum location on each continuum for success. The only conclusion that I can draw is that my pedagogy fits within the boundaries their research identified.

Characteristic	Focus of my pedagogy
Identification of needs	Based on interviews with employer; learner can negotiate
Generic / Technical knowledge/skills	Balance across these areas
New / existing knowledge	Covers both equally
Work focused / work relevant	Covers both equally
Fixed / flexible schedule of delivery	Tends towards fixed; dependent on minimum cohort size, sits outside academic calendar
Learning in / away from workplace	Learner can choose but does not attend University in person
Programme / learner centred support	Covers all aspects
Learner support by employer/provider	By provider
Recognised by professional body	Not recognised
Assessment focus on knowledge / skills	Focus on application of knowledge within learners' practice
Provider / Employer / learner undertakes assessment	By provider
Wholly accredited by provider / not accredited	Accredited by provider; credits awarded where units combined into modules
Evaluate quality of learning experience / impact on learner and organisation	All aspects covered

Table 7.2 Location of pedagogy along continua representing characteristics of WBL provision

Based on the literature about effective pedagogic design and characteristics for WBL I consider that I have been successful in the model that I have developed as I can demonstrate how my model fits the criteria the identified research has set.

My discussion so far has dealt with the more generic aspects of pedagogic design and the provision of learning for work-based learners. In the following section I will discuss my pedagogic model in the context of my literature review of designing for on-line learning and including concepts of scaffolded learning, reflection and assessment.

3 The design of the on-line environment for my e-portfolio based pedagogy

In creating the on-line learning environment for my pedagogy I have been mindful of the literature I presented that indicated pitfalls to be avoided and good practice to be emulated. The first model we developed in cycle 1 was predominately a transmission model as we had not prepared both learners and tutors (Harasim in Bullen, 1998) and we needed to make better use of networked learning to promote higher order thinking skills (Bullen, 1998, Bowskill, 2010; Cousin and Deepwell, 2005). In our review of the first pilot we saw that we had put '*old wine in new bottles*' (Becker, 2009) and we had not fully applied recognised principles for on-line learning design (Jacques and Salmon, 2007; JISC, 2009 and 2010a; Johnson and Aragon, 2003 (in Bromley and Moss, 2009)). Critical to the principles not being applied was the failure to provide staff development for the tutors and e-mentors to prepare them for designing learning in this new environment: González's research (2010) showed that some lecturers' perceptions of an on-line environment was as a medium to provide information whilst ALT (2010a) and HEFCE (2010a) established that staff capability to work within an on-line environment was an issue that needed to be addressed.

Our experiences on pilot 1 and through cycle 1 informed our approach to the subsequent cycles in that we provided tutor guidance in how to design on-line learning and organised opportunities to share good practice (Beetham, McGill and Littlejohn, 2009; JISC, 2010a) through additional workshops organised throughout the project, the continued provision of e-mentors and the e-portfolio advisor.

Salmon's model (2002 and 2003) formed the basis of our tutor guidance for the webfolio design, the creation of the auto-download and auto-publish function in cycle 3, a range of learner support materials (for both tutors and learners) and informed our approach to summative assessment. Some examples of where we used this model to achieve each stage in Salmon's model are outlined:

1. access and motivation - easier access to the template within PebblePad through a range of guidance and auto-download and auto-publish functions; clear presentation of unit learning outcomes and tutor expectations; articulation of how learner engages with the unit and what

their regular involvement needs to be; tutor monitoring learner engagement and progress and providing regular feedback and feed-forward;

2. on-line socialisation - tutor provides 'talking-head' video to introduce self to each cohort with a range of contact details (phone, email, Skype etc) and a brief overview of expectations about the unit and learner engagement; learners complete an activity in week 1, in the group blog, where they introduce themselves, what they want to achieve from studying the unit and what their expectations are, inconsistencies between tutor and learner expectations can be addressed at this early stage
3. information exchange - provided through the webfolio template and the three blog-based environments; learners can share information with tutor and other learners through the individual and group blogs; synchronous and asynchronous contributions can be made
4. knowledge construction - activities are designed to support learners in constructing their knowledge through a combination of individual and group activities that include opportunities for reflection and discussion
5. development - provided through opportunities for reflection; formative assessment tasks and assessment at the end of each unit allowing learners to reflect on what they have learnt, how that learning has been applied during the unit and to feed-forward into their plans for future study or other developmental activity.

The blog-based approach to learner interaction with PebblePad and the learning content evolved between cycles 1 and 2. Our initial design in cycle 1 had adopted the principles posited by Garrison, Anderson and Archer (2000, p88) that:

“a worthwhile educational experience is embedded within a Community of Inquiry that is composed of teachers and students - the key participants in the educational process. The model of this Community of Inquiry assumes that learning occurs within the Community through the interaction of three core elements..... cognitive presence, social presence, and teaching presence.”

In cycle 1 these elements were provided by the learning content and associated activities embedded within the webfolio pages, a group blog in which we

encouraged collaborative discussions and an individual blog for personal notes and private discussions with the tutor. Experiences of learners reported through unit evaluations and conversations with tutors showed a lack of affordance (Spolsky, 2000; Touretzky and Tira-Thompson, 2008) in the embedded activities. Reported learner experiences coupled with my research into the use of blogs (for instance: Bartlett-Bragg, 2003; Ferdig and Trammell, 2004; Lowe, 2004 cited in O'Donnell, 2006; O'Donnell, 2006) suggested the use of blogs to create all three domains (cognitive, social and teaching presences) and to achieve the affordances that were needed. In addition, the use of blogs to create a cognitive presence (where learners could record, discuss with their tutor and reflect asynchronously on their learning and experiences) provided a space for more personal reflection that Williams and Jacobs (2004) recognise has the potential for transformational learning. This individual blog was the least used by learners in the pilot groups, primarily because of a lack of understanding about its purpose, so despite its potential benefits my research cannot provide data to support the theory that I established from my literature search.

Despite the lack of use of the individual blog learners did reflect on their learning and apply their learning in their workplace; learners and employers recognised how their learning had impact on their work which is an important element of work-based learning. For instance, Nixon (2008) notes how reflective based approaches can bring benefits to the learner and the organisation.

Learners did not engage with the group blogs in the first cycle which may have been due to the tutor's unfamiliarity with an on-line environment and thus a "*failure of the teacher to lead and direct*" (Garrison, Anderson and Archer, 2000, p96). However, in the remaining cycles (and in subsequent iterations of the redesigned unit from cycle 1) the group activities involved most learners and small communities began to emerge.

Our experiences in designing the on-line environment and in supporting learners in their use of it drew on research into scaffolding learning and we found that all our learners required some guidance in how to access and engage with the units as well as to achieve the planned learning outcomes for a unit through the tutor structuring the weekly content and activities. All our learners were new to the pedagogy, most were also new to HE and to on-line learning and needed "*more learning support and scaffolding*" (Kaider et al, (2009, p497) because they are novices. Our experiences on the pilot units indicates that as the learners were

becoming more familiar with what was expected of them the scaffolding we provide can be reduced, for instance in a second or third unit instructions and activities on how to use PebblePad will not be needed but different scaffolding can be introduced on accessing alternatives to the blog based activities: supporting Cazden's view (1979, p11, cited in Smagorinsky and Fly, 1993, p168) that scaffolding can be replaced with new and different structures, once it is no longer needed.

Our use of PebblePad is as an educational software that we use to provide technical scaffolding (Yelland and Masters, 2007; Lai and Law, 2006) and also informal scaffolding e.g. for peer and / or tutor support (Wass et al, 2011). We are also using PebblePad as an environment through which we can provide scaffolding outside the curricula to offer learner support: Rourke and Coleman (2009) refer to procedural scaffolding which is the focus of much of our learner support.

Whilst scaffolding has long been seen as a necessary support for learners (Brill, Kim and Galloway, 2001; Bruner, 2006a, 2006b; Lai and Law, 2006; Lipscomb Swanson and West, 2004; Wass et al, 2011; Wood, Bruner and Ross, 1976; Yelland and Masters, 2007) it is clear from my research that scaffolding is needed at all stages and levels of pedagogic development. In my review of existing literature on, and models of, scaffolding I found that most writers concentrate on the learner experience and how a tutor can introduce different support mechanisms to assist and guide the learner in moving through a zone of proximal development and thus bridge a gap between what they currently know and what they need to learn. Others consider the need for scaffolding outside the curricula and beyond the learner experiences, for instance Coolin et al (2010a), Costley and Abukari (2010), and Costley, Shukla and Inceoglu (2010) who all recommend the creation of appropriate support systems within the organisation. My literature review, the AR cycles, my interpretive products and my principles for an e-portfolio based pedagogy, led me to deduce a taxonomy of scaffolding stages and types for learners and other participants in pedagogic development, within a concept of holistic scaffolding.

Through this discussion I have considered my research findings in the context of my literature review. In the following section I re-present my project objectives together with a summary of my evidence of their achievement.

4 Project objectives and evidence of achievement

Objective	Achievement through:
Establish existing practice and relevant personnel and practice	Completion of audit phase to review existing practice Publication of 'Baseline Audit' Invitations to participate in project
Undertake a detailed search and review of relevant literature and existing practices	Primarily evidenced within Chapters 2, 3 and 4
Use an action research methodology to design an e-portfolio based pedagogy	Successful completion of project Evidenced through Chapters 4, 5, 6 and 7
Design and/or test procedures to design, validate and quality assure learning that meets the specific needs of work-based learners in SMEs	Successful completion of project Evidenced through Chapters 4, 5 and 6
Involve the University, the learners and the employers in the design and evaluation of the pedagogy	Successful completion of project Evidenced through Chapters 4, 5 and 6
Determine key pedagogic principles for an e-portfolio based pedagogy	Evidenced through Chapters 5 and 6
Develop information, advice and guidance materials	Evidenced through Chapters 5 and 6
Disseminate findings	Range of journal publications Presentations at workshops, seminars and conferences Project website ePPSME Final Project Report (Appendix 1)

Table 7.3 Project objectives and evidence of achievement

5 Limitations of my research approach

5.1 Restraints

A number of restraints were set on the project at the outset that defined the context in which the pedagogy was to be set and which constrained our pedagogic design.

The role of the subsidiary company in undertaking the interviews with SMEs to establish performance needs to inform the learning needs and consequential unit design prevented the research team from investigating the interview instruments and analysing the related processes. The power relationships (see below) meant that the research team did not have access to either the interview instruments or the employers and we had to find alternative ways of assessing the impact of

the learning provided on learners and their workplace and employer evaluation of the pedagogic model.

The need for minimal synchronous activity with learners prevented us from exploring the effectiveness of any face-to-face engagement, for instance at the start of a unit as an opportunity for socialisation and to support learners in accessing and using the software. Within the project we did not have the opportunity to explore this as an alternative model to assess potential benefits of such a model hence we cannot ascertain if this could have impacted on learner performance or attrition. Delivery models for cohorts outside the pilot units have included synchronous on-line engagement through one-to-one and one-to-many video conferencing software (Skype and WebEx) which have been successful as alternative methods of engagement with some learners, although others chose not to join such discussion groups.

5.2 Stakeholder relationships and impact on the project outcomes

The JISC-funded ePPSME project provided an opportunity to explore new ways of working with employers and work-based learners and to investigate the concept of designing bite-sized learning (5-credit units) to meet identified market needs. The original research design was based on a tri-partite relationship between the University, the learner and the employer where learning needs would be identified, learning designed and experienced within the e-portfolio environment and an evaluation undertaken of whether or not the learning had met the needs identified. Original plans were to invite employers who were already known to the curricula design teams to be partners in the project and to participate fully in the AR process proposed. Another partner in the project was the University's subsidiary company who was developing an approach to employer engagement which included structured interviews to establish business performance needs. The ePPSME project provided a means by which we could research the effectiveness of the subsidiary company's proposed approach and work with them to enhance it, based on the evolving research findings. The company would also be an equal partner in the research project. Other partners included a range of internal stakeholders including representatives from University Executive, IT Services, Learning Information Services, Quality and Academic Standards and five Academic Schools. With the exception of the company (and as a result, employers) all other partners joined the project and approached it as a curriculum and business development opportunity to which

they contributed and engaged with fully. Unfortunately for the project the company did not engage in the way that was originally envisaged and this had implications for project management, relationships with other participants and, most importantly, in severely restricting access to the employer voice and preventing full employer involvement in the project.

In the early stages of the project I was unable to access the draft Performance Needs Analysis (PNA) interview instrument (it was 'owned' by the company) and so was reliant upon the company to provide data to inform the learning needs analysis (LNA). The template for the LNA was also being developed by the company who chose to retain this task and not offer it to the project for incremental development. One option open to me was to create new instruments (for PNA and LNA) to allow me to conduct my research as planned but this was not realistic because it would be likely to result in unnecessary tensions between the partners. I needed to find a way to work with the stakeholders rather than against them. Consequently I took the decision to allow the company to undertake the interviews and provide the data to inform the curricula we designed and to ask them to identify employers whom we could invite to be involved in the project. Despite assurances that such employers would be identified the project continued without these being fulfilled and eventually we had to accept the fact that we would not be able to include the employers in the AR. With the benefit of hindsight I should have made alternative arrangements earlier in the project to include employers and if I undertook a similar project in the future I would identify alternative approaches early enough to implement them if a contributor failed to meet their commitments.

The lack of direct employer participation in the project meant that the employer voice could not directly impact on the development transformation we proposed through the AR. However, I contend that the employer voice was indirectly present through the data provided through the structured interviews (leading to the PNA) and the semi-structured interviews conducted as part of the project evaluation. Through these processes the employers provided their opinions about the pedagogic approach we had adopted and the potential impact of their employees' learning in their respective workplaces. However because the employer voice was not fully integrated into the project my findings have limitations in their validity as far as the employer viewpoint is concerned.

6 Reflections on my learning journey as a work-based researcher

6.1 Why a professional doctorate?

When I joined the University of Wolverhampton in 1993 I was ignorant, and probably somewhat naïve, about potential career paths in academia and the importance of a doctoral qualification as part of an academic career. I had studied for a vocational degree at a Polytechnic where the focus was on completing undergraduate study and finding employment in the Construction Industry. I was employed by the University because I had practical knowledge in my subject area and a few years passed before I recognised the value of a doctoral qualification. Although I expressed an interest in doctoral study, through a PhD route, there was limited support for me to follow this route and no time allowance for me to undertake the studies.

I extended my role as lecturer and course leader to include leading on learning and teaching within my Academic School and eventually into my current role within the University's educational development unit, the Institute for Learning Enhancement (ILE). Because I had found a route through which I could achieve promotion my interest in doctoral study took a back seat for a number of years but eventually I reached a point where further progression in my career in academia without a doctoral qualification was becoming limited. I wanted to stay in academia and I was keen to continue to progress my career if a suitable opportunity arose.

When I first moved into the ILE from my academic school it was as a secondment to the role of a Senior Learning and Teaching Fellow which included the opportunity for doctoral study. It was this opportunity that was of particular interest to me and a professional doctorate route, rather than a PhD, fitted in with my career aspirations, my personal needs and an identified strategic need for the University. In my application letter I referred to my proposed project as follows:

“The aim of the project, ..., is to investigate the opportunities for work-based learning (WBL) to be incorporated within the portfolio of programmes at the University of Wolverhampton. Its primary outcomes will be the benchmarking of current provision, the identification of good (and bad) practice, opportunities and threats, determine who are the primary stakeholders and the development (and possibly implementation) of the university strategy on work-based learning. The

University is recognised as a leader in the implementation of e-portfolios, one use of which is to support students on placement and those involved in work-based learning; the proposed project will look at the potential uses of e-portfolios in its future WBL provision.

WBL is a vital issue for the future viability of HEIs and is a key item on the political agenda. The university needs to address this at the strategic level to ensure its continued competitiveness whilst ensuring quality is assured and enhanced. It is recognised that there is a wealth of existing practice within the university but this is not, generally, shared or recognised. The project work proposed is necessary in order to ensure that the existing provision is increased to meet existing and future demand, and to maintain and to enhance quality.”

In summary, a professional doctorate route allowed me to continue my work at the University, achieve a qualification that would open career opportunities to me and my proposed research had the potential to have impact at a strategic level within the University. Although the project that is the focus of my research has altered significantly from my early expectations the outline I identified in my application letter and the impact on my career opportunities align precisely with what I have achieved through my doctoral studies.

6.2 Critical incidents in my journey

- **Power relationships**

When I was first asked to lead the ePPSME project I intended to run it as a work-based research project that would involve a tri-partite relationship between employers, learners and the University to co-develop a pedagogy that could meet the needs of all three contributors. The subsidiary organisation was intended to be an integral part of the University team and to contribute the development of their interview tools and processes to the pedagogic development. In practice, there was a different understanding of the relationships between the parties and of understandings about the project work on which I was leading. Despite my attempts to refocus the activity around the intended project work I was unsuccessful and access to employers to involve them directly in the research cycles was severely limited, resulting in me rethinking my research approach to the one that is reported in this thesis. I am confident that the developmental transformation approach we achieved through the consecutive AR cycles has allowed us to create an effective pedagogy and I also recognise my ability to change, respond and adapt to an emerging situation. I was not able to remove the conflicts that arose but I believe I managed them effectively to ensure that the required outcome was achieved, showing that I

can reflect-in-action and on-action (Cowan, 1999) as both a researcher and as a manager.

- **My own need for scaffolded learning**

I have found my learning journey through my professional doctorate to be a lonely one and I have struggled at times to find my way. In carrying out the project management role I was confident of my abilities as I have many years of experience of managing quite complex projects both within and outside academia and I was part of team who were mutually supportive in conducting and evaluating the evolving pedagogic design. I was part of a community of learners in the project but I did not feel part of a community in my learning (Becker, 2004; Brown, 2009). Loneliness is recognised as a primary reason for attrition (Mackie, 2001; Martinez and Munday, 1998; Tinto, 1975, in Draper 2005; Wiley, 2002; and Yorke and Longden, 2007). Fortunately for me the need to successfully complete the JISC project was paramount and this enabled me to continue with my research work alongside it.

As in previous projects I have managed, I created scaffolds to support my own and others' learning and activities on the project through tutor guidance, structured workshops with identified outcomes and activities, regular recording and reporting through formal and informal mechanisms and templates to record data collected from a range of sources. The project evaluation evidences the success of my management approach. What I found I needed was more structure towards my approach to my research, particularly around the formal analysis and writing up during my project so that my thesis was completed alongside my research rather than being written after the end of the work on the JISC-funded project, although I realise that there are likely to have been a number of rewrites of the constituent parts needed. My experience has shown me that although the scaffold may be available to me, as a learner I may need help in finding it and in making effective use of it. To relate this to my construction management analogies, a scaffold might have been constructed around a building but if the scaffolder has not left a ladder with which to access the working platform the scaffold cannot be used. As a consequence of these experiences of accessing and using scaffolds I have become more aware of learner needs from the perspective of the learner and have recognised more fully the importance of the affordances that scaffolding needs to offer the learner.

- **Washing the elephant**

In seeking a framework around which I could scaffold my writing, I procrastinated for some time over how to write up my research; where to start, what to do, and how to do it. *“I had accumulated a mass of data in a rather hamster-like fashion”* (Winter, 1989, p113) and although I had been analysing it informally to inform the change interventions introduced I had not been writing up my research, in the form of a thesis, as the project proceeded. At times I felt quite overwhelmed by the mountain that I imagined before me until a colleague put it into perspective for me by using the analogy of washing an elephant: if you worry about how you are going to do the whole thing then you will find it hard to start. What you need to do is start with the first foot, then move on to the second and before you know it you will have washed the elephant!

This analogy, coupled with a lightweight scaffold, provided me with the strategy I needed to slowly, but surely, tackle the work of writing up my research into what has become this thesis.

6.3 My own developmental transformation

In Chapter 4 I discussed the action research approach of developmental transformation (McNiff and Whitehead, 2010). In reflection on my experiences I realise that I have undergone my own developmental transformation. I have extended and broadened my knowledge of WBL, pedagogy and e-learning as well as of myself; my studies have resulted in transformational learning (Mezirow, 1991 and 2000) that has been incremental in its evolution through a series of *“disorienting dilemmas”* (Mezirow, 2000, p106) .

In earlier work on my doctoral studies I reflected on my learning journey and I chose to represent my journey as a tree with the completion of my doctorate as the pinnacle of the journey. Through my studies on the project on which I report in this thesis, and the work I have been undertaking alongside them, I have a new image of my transformation through these latest episodes on my learning journey. I now realise that during my doctoral studies I was in a cocoon: I was a chrysalis undergoing another transformation. As I come to the end of my studies I have transformed into a new being. I see myself now as a butterfly that has exited this latest transformation and is extending and unfolding its wings allowing them to dry in the growing warmth of new and unexplored territory. I have grown in confidence in my work and other aspects of my life.

The changes I have gone through have moved me forward as a social scientist and I have improved my standing and recognition at work. I have published a number of conference and journal articles, contributed a chapter to and co-edited a book and I am under consideration as one of the University's candidates for the next research assessment exercise (the REF). In 2011 the University nominated me for a National Teaching Fellowship Scheme (NTFS) award and I am leading an influential project on behalf of the University that will inform the future strategy regarding business and community engagement (BCE) and WBL in my new role as Head of Work-based Learning.

7 Conclusion

In this chapter I have discussed my research findings in the context of my literature review, I have evidenced how my project objectives were achieved and I have reflected on my doctoral studies as a recent stage in my lifelong learning journey. In the next chapter, the final one of this thesis, I present my primary project output, conclusions and recommendations.

Chapter 8 Project Outputs, Impact, Conclusions and Recommendations

1 Introduction

The primary project output is an e-portfolio based pedagogy for work-based learners in SMEs which is evidenced through the ePPSME Final Project Report submitted to JISC at the end of the funded project period. This report is supported by the project website which hosts the artefacts that have been created during the project including resources, conference papers, journal articles and interim reports. In this chapter I discuss how the report and the website are used and how my research informed the outputs. I look at the impact of the project on the University and the wider academic community and I present the development of the pedagogic model since the JISC project was completed. In the final sections I offer my conclusions and recommendations for my doctoral research.

2 Project outputs

There are two key sources of evidence that I present as the project outputs: the ePPSME Final Project Report which is included in Appendix 1² and the ePPSME project website (<http://www.wlv.ac.uk/eppsme>) which is included in Appendix 2 (as printed screen captures).

The ePPSME Final Project Report is presented within a standard JISC template and summarises the work undertaken during the project and includes the project activities and outputs, the impacts and benefits to the community, lessons learned and implications for the future. The website provides the same information but in a web-based format and with live links to the project deliverables.

My work in managing the ePPSME project and in conducting my doctoral research are inextricably linked: the ePPSME project was the focus of my doctoral work and the research undertaken informed the pedagogic development of the e-portfolio based model. Where the report and this thesis differ is in the focus of

² The web-based version of the Report, accessed through the project website includes embedded links to the outputs referenced in the report.

the writing up. The Report has been written for a non-specialist audience and its purpose is two-fold. Firstly, it is intended to provide guidance to others considering technological innovation in their practice and, secondly, to evidence that public funds have been allocated appropriately. This thesis is written for an academic audience and needs to show that I have met the standards set for achieving a doctoral award. It has reported my research work, explained how I have analysed the data and how my interpretations led to my concept of holistic scaffolding, a taxonomy of scaffolding and my principles for an e-portfolio based pedagogy.

The Report and website have, by necessity, taken an approach that concentrates on the practical aspects of managing a project and developing a technology-based pedagogy. Resources created as part of the pedagogic development that are used by the University and that give an overview of the pedagogic design include:

- [Demonstration webfolio](#) - interactive demonstration showing the key design principles of the pedagogy
- [Tutor design guidance webfolio](#) - web-based information, advice and guidance for tutors who are asked to design units
- [Learner support webfolio](#) - web-based information, advice and guidance for learners wanting to study, or studying, a unit
- [Mary's Learning Journey video](#) - a short animation of the activities that form the interview, design and study of a unit, seen through the eyes of a work-based learner
- [Narrated Captivate video](#) - a talk through screen demonstration for new learners

As part of my work on the JISC project, and to provide an outlet for my concurrent academic research, I presented the activities and outputs of the project (and related work) at a number of conferences, workshops and seminars (see Report and Website) and published articles in peer reviewed journals (Felce, 2010 and 2011; Felce and Purnell 2011 and 2012).

3 Project impact

There have been a number of internal and external impacts from the project which are summarised here. Additional evidence to support these statements is given in the Appendices.

1. The University has a pedagogy that can meet the needs of learners in SMEs and that has an impact on the workplace.

“I think it is an excellent opportunity for work-based learning, small units make it manageable and open opportunities for more employees to learn. Would be happy to send employees on this again.”

(End of project interviews, Employer T, Pilot unit 2)

“I see the project as having a significant work based bias. In the sense that it leaves the customers with a usable legacy once the project is finished. I think it will improve customers’ skills better than a more traditional course as it deals directly with what the customer needs.”

(End of project interviews, Support staff 1)

“In general I believe that our staff are more informed about what is happening within the company and how they and their department is performing within the company.”

(Learner feedback from email to on-line tutor)

“[I] have found that by studying this unit I am able to read situations differently and see things from a different perspective.”

(Learner CB, feedback, pilot unit 2)

“I have been able to think on a higher and more strategic level and so I have improved my ability to apply higher level thinking to my job role.”

(Learner K, feedback, pilot unit 3)

2. The University has a proven approach to designing, validating and delivering learning to learners in SMEs.

The ePPSME project, and related activity, informed the development of the FLOW Process (Flexible Learning Opportunities at Wolverhampton) and in particular the part of the process that refers to *i-CD units* [the ‘brand name’ for the 5-credit units]. The process was developed and tested through the action research cycles in the ePPSME project. Details on the FLOW process are available at: <http://www2.wlv.ac.uk/registry/qasd/CPD/Flow.pdf>.

The FLOW process is the University’s approach to design and validation of the units and the ePPSME model developed through my project provides the method for delivery of the units.

3. The pedagogy is being used for other courses e.g. Foundation Degrees and Distance Learning courses.

Five-credit units have been used to create the first 20-credit module as part of a planned Foundation Degree to be developed for the Institute of Clerk of

Works and Construction Inspectorate (ICWCI). [Examples of 5-credit units are given in Appendix 9].

The ePPSME model formed the basic structure for a new on-line distance learning course for home and international students. The model has been adapted for 20-credit modules (instead of the 5-credit units). [Letter from Dean of School of Law, Social Sciences and Communication included in Appendix 10].

4. Aspects of the pedagogy have been adopted / adapted by other HEIs.

Cardiff Metropolitan University (formerly University of Wales Institute, Cardiff, UWIC) “*adapted and contextualised [the ePPSME model] in order to support more effectively the learning of students undertaking a mandatory, work-based module within UWIC’s Cardiff School of Management*” (UWIC, 2011, p13).

5. Software functions we developed are being used in HEIs across the world.

As part of the project we contracted Pebble Learning Ltd to develop two new functions, Auto-Download and Auto-Publish, to remove the difficulties learners reported in accessing their learning materials. Pebble Learning included these new functions in PebblePad v 2.5 which was being used by over 95% of PebblePad institutional users in September 2010 (Pebble Learning, 2010). PebblePad is used by “*over 100 organisations and around half a million users*” (Sutherland et al, 2011, back cover), primarily in the UK and Australia. [Confirmation from Pebble Learning is included in Appendix 11].

4 Continuing developments

The lessons that we learned from the project have informed the University’s approach to distance learning and the model that we developed for 5-credit units has been adapted to one that is suitable for distance learners on a law degree. The first students on the course will begin in January 2012.

The 5-credit model was used for the design and delivery of a module that forms part of a foundation degree in construction. The principles for the design and assessment of 5-credit units and their contribution to a 20-credit module were enacted with eight work-based students successfully completing the summative assessment in autumn 2011. Although successful, each 5-credit unit takes 10

weeks to complete, planned developments include the design of the four units as a single 20-credit module, delivered through the e-portfolio platform. The module has been accredited by a professional body and will form part of an entry route into membership of that body. It will continue to be accessed by work-based learners.

5 Research conclusions

This project, to develop an e-portfolio based pedagogy, was aligned to the University's strategic objectives and with the University's macro and micro contexts. This alignment ensured the success of the project, the continuation and adaptation of the pedagogic model and the embedding of the systems and procedures to support similar educational developments.

The project management team included all key internal stakeholders and the system of retreats and workshops ensured that all stakeholders were given a voice in the development of the new pedagogy. The involvement of the Pro-Vice Chancellor (Academic), as chair of the project's Steering Group, ensured that senior management were informed of the emerging pedagogy, the evolving adaptations to systems and procedures and she could ensure that the project developments could be seen in the light of other developments across the University.

The participative action research methodology was an appropriate approach to adopt and its use to enable developmental transformations was an effective means of ensuring that the pedagogy was able to meet the needs of work-based learners in SMEs. The iterative cycles of plan, act, observe and reflect allowed the project team to identify and implement change interventions and to assess their impact.

Key to the success of the pilot units within each cycle was the e-portfolio advisor who supported the unit tutors and e-mentors and provided expert advice to learners studying on the units. Through this model we started to build capacity within the schools to design and deliver learning using our innovative pedagogy and this has continued through the adaptations to the pedagogic model that have been introduced.

The project has proved the need for scaffolding to extend beyond the virtual classroom and the immediate student experience through the provision of

structured support and guidance to tutors, quality assurance officers, IT services providers, middle and senior managers as well as to the learners' employers. We found that optimum results are achieved where scaffolding is provided in a range of media formats and from a variety of perspectives.

6 Recommendations

The pedagogic model developed in the project is based on a notional ten-week study period for each 5-credit unit with no face-to-face interaction between learners and tutors. Alternative ways of interacting with learners should be investigated and a comparative study undertaken to assess if there is an optimum model for learning and minimising attrition. The costs, scalability and sustainability of each model should also be considered.

Flexibility in our model is provided through the ability of an iteration to commence once registration meets the minimum number for a cohort and by allowing learners to access the learning asynchronously so that they can choose when they study. Alternative models to allow more flexibility should be developed with due consideration given to implications for collaborative learning opportunities and tutor-learner interaction in the different models.

A significant aspiration for the pedagogic model is that it will allow learners to select their own choice of 5-credit units and combine them, through the e-portfolio, to submit summative assessment and to achieve University awards. Additional research is needed to develop and test the pedagogy, including the University systems and procedures, before this aspiration could be achieved.

More work is needed to extend the e-portfolio based pedagogy to encompass the array of potential learning that can be considered for accreditation. One key area, that has been the subject of a smaller project, is the development of the e-portfolio software to record prior experiential learning and through which learners can seek accreditation for this learning. The work that has been completed to date has proved the planned approach in a test pilot but additional work is needed before it can be made available to learners and potential learners.

7 Conclusion

My doctoral research has explored and reported on the development of an e-portfolio based pedagogy for work-based learners in small to medium sized enterprises funded by JISC. The concept behind the idea for using an e-portfolio was the opportunity the technology offers learners to bring together their lifelong and life-wide learning experiences, for formal and informal learning experiences to be included, for formative and summative assessment and for the provision of access to a range of learner support.

My work has resulted in the development of a pedagogic model that is being used for work-based learners and that has been adapted for other distance learning models. The inclusion of key stakeholder groups has ensured that the pedagogic model extends beyond the immediate learning environment and that it is embedded and supported throughout the University.

My research findings posit the idea of holistic scaffolding and a taxonomy of scaffolding to represent the different genres of learner in an educational development such as mine and the range of support needed to develop, implement and understand a new pedagogy

The project outputs and research findings that I have presented in this thesis show that my work has advanced knowledge in this subject and has impacted on practice at the University of Wolverhampton and elsewhere.

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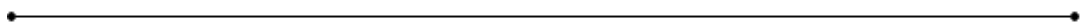
Appendix 1: ePPSME Final Project Report



Appendix 2: ePPSME Project Website



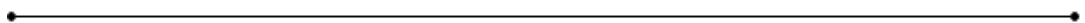
Appendix 3: ePPSME Project Plan



Appendix 4: ePPSME Work Packages



Appendix 5: Mid-unit and end of unit evaluation questions



Appendix 6: End of project interview questions



Appendix 7: Report-and-respond enquiry and responses



Appendix 8: ePPSME Baseline Report



Appendix 9: Evidence of ePPSME model's use on Foundation Degree



Appendix 10: E-mail confirming use of ePPSME model for on-line distance learning course



Appendix 11: Email from Pebble Learning Ltd



Appendix 12: Presentation from Viva



JISC

JISC Final Report

Project Information			
Project Hashtag			
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We would like to thank the following organisations, institutions and individuals for funding, participating in, and contributing to the success of the ePPSME project. They are:

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- The Project Steering Group, in particular, Professor Sally Glen (Chair)
- Project Participants:
 - Work-based Learners in the pilot units for engaging with the learning and providing reflective commentary and evaluation
 - Academic staff in the five Schools involved in the pilot unit design and development, delivery of learning and for providing evaluative comments
 - University staff in support departments for their involvement in systems development, design workshops and for providing evaluative comments
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- Staff within the Institute for Learning Enhancement, both within, and outside, the immediate project team for their continued support through the bid development, project design, implementation and evaluation.

2 Report Summary

2.1 Project Overview

The ePPSME project has provided the Higher Education sector with reusable models and resources for an eportfolio based pedagogy to address the needs of small to medium-sized enterprise (SME)-based learners. It has enabled the University to provide HE learning opportunities to work-based learners that are bespoke to the individuals' learning needs whilst being cost-effective and sustainable business for the University. Academic staff have an improved ability to negotiate and provide learning solutions for work-based learners and have been involved in staff development that will enable them to meet the future business of the University.

The project adopted a participative action research approach through a series of design workshops and consecutive pilot study units to develop the use of an eportfolio tool as a virtual learning environment and personal learning space to introduce and develop the learners' reflective practice around targeted learning content. Market research was undertaken to determine common themes in business and learner needs leading to the setting of learning outcomes and content for the study units, each of which equates to 50 notional hours of learner effort (5 HE credits). Learners can combine units of study and submit summative assessment to achieve 20 HE credits.

Initial study units in the pilot subjects were based around a webfolio structure using three types of blog-based engagement: individual activity responses, group collaborative discussions, personal critical reflections. Ease of use was achieved through targeting typical skills required for activities such as web-browsing and simple word-processing to avoid deterring learners who lack confidence in their IT competencies.

2.2 Project Outputs

A summary of the project deliverables and outputs is given below. Further details are available from the project website: <http://www.wlv.ac.uk/eppsme> and the [project blog](#). Links to all the outputs are given within the text and on the project website.

2.2.1 Project deliverables

We have developed processes that will:

- address the specific needs of SME based learners which are directly linked to the performance needs of the enterprise, as well as individual learners.
- enable academic teachers to develop responsive, context sensitive, bespoke eportfolio based curricula.
- enable the negotiation of eportfolio based learning experiences which have regard for: prior learning (informal and formal), recording achievement, flexible delivery, alignment of individual and organisational learning/performance needs; confidentiality and ethical frameworks for work-based inquiry.
- ensure the speedy passage from learner and workplace performance needs' analysis to deliverable, quality assured curricula.

- generate a range of work-based learning undergraduate modules within a flexible accreditation framework.

We have designed and maintained a project website containing links to documentation and guidance for each of the above processes presented above, namely:

- Models of a negotiated approach for performance and learning needs analysis in an SME with supporting training materials for learning consultants
- Teacher development materials for making sense of needs/performance analysis information to support work-based learning supported by eportfolio.
- Processes for light touch, speedy Quality Assurance which builds a flexible, marketable set of learning units.
- Resources relating to eportfolio pedagogic techniques applicable to SMEs specifically, profiling tools, critical incident gathering, blogs, learner created webfolios, learning journals, and uses of scaffolded templates.
- Introduction to:
 - Work-based inquiry (ways of uniting the interests of the workplace with that of the individual learner)
 - Accrediting informal learning (APEL, ways of valuing and harnessing informal learning to formal learning)

2.2.2 Knowledge and other outputs

Through the course of the project we have achieved the following changes to our knowledge and other outputs:

- The required adaptation of current knowledge and use of eportfolio with work-based learners
- Increased knowledge and understanding of employer engagement and how HE can identify and support learner needs
- Development of a work-based learning community within the University to share good practice and grow the community within and outside the organisation
- Potential for consultancy work with other HEIs in introducing an eportfolio based pedagogy within their courses
- Written articles at conferences and within peer reviewed journals as well as dissemination through existing networks.

2.2.3 Reports

A number of reports have been submitted to JISC during the project along with work package schedules. We have also received written reports from our Consultant who we employed as an External Evaluator for the project

2.2.3.1 Baseline report:

- [ePPSME Baseline report, October 2009](#)

2.2.3.2 Progress reports:

- [Project Plan ePPSME May 2009](#)
 - [Work packages ePPSME May 2009](#)
- [Progress Report ePPSME 2009 07 13](#)
 - [Work packages ePPSME July 2009](#)
- [Project Interim Progress Report ePPSME 2009 09 30](#)
 - [Work packages ePPSME Sept 2009](#)
- [Progress Report ePPSME 2009 12 10](#)
 - [Work packages ePPSME Dec 2009](#)
- [Project Interim Progress Report ePPSME 2010 03 10](#)
 - [Work packages ePPSME Mar 2010](#)
- [Project Interim Progress Report ePPSME 2010 09 26](#)
 - [Work packages ePPSME Sept 2010](#)

2.2.3.3 Final report:

- [Final Report ePPSME March 2010](#)

2.2.3.4 External Evaluator reports

- [Evaluation Report](#) from External Evaluator
- [Evaluation of Project Feedback](#) by External Evaluator

2.2.4 Conferences

Throughout the project we submitted abstracts to a range of relevant conferences to disseminate our project proposals, methods, designs, outputs and findings. Every abstract submitted was accepted for conference, as represented in the table below.

Note: Links given will show an un-narrated video of the presentation/demonstration given at the event.

Date	Conference	Location	Involvement	Title
2010 April	JISC conference	London	Demonstration	<i>Exploring an embryonic pedagogy</i>
2010 April	Work-based Learning Futures 4	Middlesex University	Presentation and conference proceedings	<i>Changing policies, their impact on the provision of work-based learning and the development of an eportfolio based pedagogy for WBL</i>
2010 April	Centre for Excellence in Professional Placement Learning (CEPPL)	Plymouth	Presentation	<i>Using blogs within an eportfolio pedagogy to support and enable work-based learners</i>
2010 April	Centre for Recording Achievement	Nottingham	Presentation	<i>An eportfolio based pedagogy for work-based learners</i>
2010 June	PebbleBash 2010	Shifnal	Presentation and conference proceedings	<i>Developing an eportfolio pedagogy for small and medium sized enterprises</i>
2010 June	Professional, Vocational and Workplace Learning	Cyprus	Presentation and conference proceedings	<i>Cross-university collaboration for work-place learning: a case study (Paper presented previous developments and showed how these linked with ePPSME project work)</i>
2010 July	The Work-Based Learning Network of the Universities Association for Lifelong Learning, Annual Conference (UALL)	Teesside	Presentation and conference proceedings	<i>Innovative curriculum design: Mary's journey in a pensieve</i>
2010 September	Alt-C	Nottingham	Presentation	<i>The design and implementation of an eportfolio based pedagogy to enable work-based learners</i>
2010 November	JISC – Innovating e-learning	On-line	Have-a-go demonstration	<i>Using eportfolios for work-based learners in SMEs (Narrated video and demo webfolio)</i>

2.2.5 Publications

The project has been written up in a number of publications, some related directly to the conference at which work was presented, others as case study material within other project work.

- May 2010 – HEFCE funded Project led by Centre for Recording Achievement (CRA): HE5P Case Study – [Scenario 6: Working with SMEs](#)
- Felce, A. E. & Purnell, E. (2010) Using an eportfolio based pedagogy for work-based learners: Action research and emerging practice, PDP and eportfolio UK newsletter, 19, 4 – 5. Available online at: <http://www.recordingachievement.org/news-and-events/publications/pdpuk.html> (accessed 18th February 2011).
- Felce, A. E. & Purnell, E. (2010) Developing an eportfolio pedagogy for small and medium sized enterprises. Available online at: <http://www.pebblepad.co.uk/pp2010/cs01.pdf> (accessed 11th February 2011).
- November 2010 – Technology Enhanced Employability and Employee Learning: a staff guide (http://www.leedsmet.ac.uk/101213_7585_STEEL_Web.pdf).
- Felce, A. E. (2011) Cross-university collaboration for work-place learning: a case study, Higher Education, Skills and Work-based Learning, 1(1), 63-77. [<http://www.emeraldinsight.com/products/journals/journals.htm?id=heswbl>].
(Note this article is based on work from an earlier University project, the output from which informed, in part, the ePPSME funding bid proposal).
- Felce, A. E. & Purnell, E. (2011) Innovative curriculum design for work-based learners in small to medium sized enterprises using eportfolios: Mary's journey using a pensieve, Work-Based Learning e-Journal, 1(2), 39-54. [<http://wblearning-ejournal.com/currentissue.php>].
- Felce, A. E. & Purnell, E. (forthcoming) Changing policies, their impact on the provision of work-based learning and the development of an eportfolio based pedagogy for WBL, Higher Education, Skills and Work-based Learning.
- Under consideration for inclusion in planned publication: "Pebblegogy" Felce, A. E. & Purnell, E. Designing Learning for Work-based Learners, in: S. Sutherland (Ed) Pebblegogy.

2.2.6 Dissemination events

We sought a range of opportunities for internal and external dissemination, as well as being invited to disseminate information about the project, other than through conferences and publications (see above). A list of the other events is given below, with links to relevant material, where this is available.

2.2.6.1 Internal dissemination

- Steering Group Meetings, Project Team Meetings, Retreats and Workshops held at regular points throughout the project. (See [ePPSME Project Blog](#)).
- Project progress presentations to School Associate Deans (Learning and Teaching), Academic Standards and Quality, IT Services and Learning Information Systems.
- Report produced for the Vice-Chancellor to present to the Governors to tie developments in ePPSME with other aspects of the University business.

- Meetings with Registry to develop on-line registration and payment for learners on ePPSME units and for the review of relevant academic regulations for learners studying ePPSME units.

2.2.6.2 External dissemination

2009

- Project start-up publicity:
 - Radio interview with Beacon Radio
 - Press Release in Birmingham Evening Mail
 - Press Release in Yorkshire Post
 - Press Release in Express and Star
 - [Press Release in Scotsman](#)
 - [Press Release on University website](#) and [news banner](#) on homepage

2010

- **January 2010**, University of Gloucestershire - Co-Gent / ePPSME Assembly - [Academic accreditation frameworks](#)
- **February 2010**, University of Central Lancashire - Telstar Assembly –APEL / PebblePad
- **April 2010**, Wolverhampton Science Park – Staffordshire, Shropshire, Stoke-on-Trent and Telford and Wrekin Lifelong Learning Network – Innovative methods of work-based assessment – workshops: [Assessment of WBL using an eportfolio pedagogy](#)
- **May 2010**, Aston University – [Employer Responsive Provision Event](#)
- **September 2010** – Case study/evidence in response to request from million+: Research that Matters
- **October 2010**, Oxford - [Festival of Assemblies](#) – Trade Fair and Workshop
- **December 2010**, Leeds – STEEL the showcase seminar. [Presentation](#) / Case Study in [Technology Enhanced Employability and Employee Learning: a staff guide](#)

2011

- **January 2011**, Cardiff – UWIC / WELL Assembly – Gathering and presenting evidence for impact and sustainability. Short presentation on the ePPSME and ePCoP projects which can be viewed, along with the other presentations, at the [UWIC JISC Projects library](#).
- **March 2011**, Birmingham – JISC Learning and Teaching Practice Experts Group Meeting – Presentation of ePPSME project outputs and impact through market place activity, [ePPSME Poster 5: ePPSME Project Findings](#).

2.2.7 Resources

A wide range of resources have been developed throughout the project. All relevant output resources are listed below with links to the corresponding materials which are also available through the project website.

- [ePPSME project website](#): an overview of the project with links to outputs and other relevant websites
- [ePPSME project blog](#): a blog-based project diary highlighting key events and activities
- Posters:
 - [ePPSME mind map, May 2009](#): a visual representation of the project plan
 - [ePPSME timeline, May 2009](#): a timeframe for the key project activities and phases
 - [ePPSME project management, Feb 2011](#): an organogram showing stakeholder involvement and participants' roles
 - [ePPSME concept, Jan 2011](#): a spidergram identifying aspects of a learner journey that can to be captured in our eportfolio based pedagogy
 - [ePPSME frameworks, Feb 2011](#): a mind map to highlight the variety of aspects covered by the project
 - [ePPSME Poster 1](#): Project overview, Feb 2010
 - [ePPSME Poster 2](#): A developing pedagogy, April 2010
 - [ePPSME Poster 3](#): ePPSME development, May 2010
 - [ePPSME Poster 4](#): ePPSME project overview, May 2010
 - [ePPSME Poster 5](#): ePPSME Project findings March 2011
- Project Video, [Introduction to the project](#), May 2010. Outlines the project aims and methodology to develop an eportfolio based pedagogy for work-based learners in SMEs. An outline of the pedagogy is given and a learner presents her evaluation.
- [Mary's Learning Journey](#). A short animation that depicts the activities included in studying for an ePPSME unit, seen through the eyes of a typical work-based learner developed from a composite of learners in SMEs who took part in the project.
- [Video interview](#) with the Project Director at the Festival of Assemblies, Oct 2010.
- Video interviews capturing a "Learner's Voice"
- [Narrated captivate video](#): a talk through screen demonstration
- [Demonstration webfolio](#): interactive demonstration through an example webfolio showing the key design principles.
- [Pilot Unit 1 - Webfolio version 1](#); a demonstration showing the design of the first webfolio template used with the first pilot group of learners
- [Pilot Unit 2 - Webfolio version 2](#); a demonstration showing the design of the second webfolio template used with the second, and subsequent, pilot groups of learners
- [Tutor design guidance webfolio](#), including:
 - [Weekly content checklist](#)
 - [Learner progress record](#)
 - [Learner journey process map](#)

- [Units/Modules framework](#)
- [Learner support webfolio](#), including:
 - [Software compatibility checker](#)
- [Flexible Learning Opportunities at the University of Wolverhampton \(FLOW\) and the management of CPD proposals](#) [Sections within this procedural document for ePPSME units, see references to i-CD units].
- We worked with Pebble Learning Ltd to develop **auto-download** and **auto-publish** functions to overcome problems students were encountering in accessing their learning materials. These functions have now been rolled out across all PebblePad users (with version 2.4.1 or above) in both the UK and international markets. They are being used for traditional taught programmes in Higher Education and Further Education as well as for Continuing Professional Development and our original target group, work-based learners.

2.3 Impact and Benefits to the Community

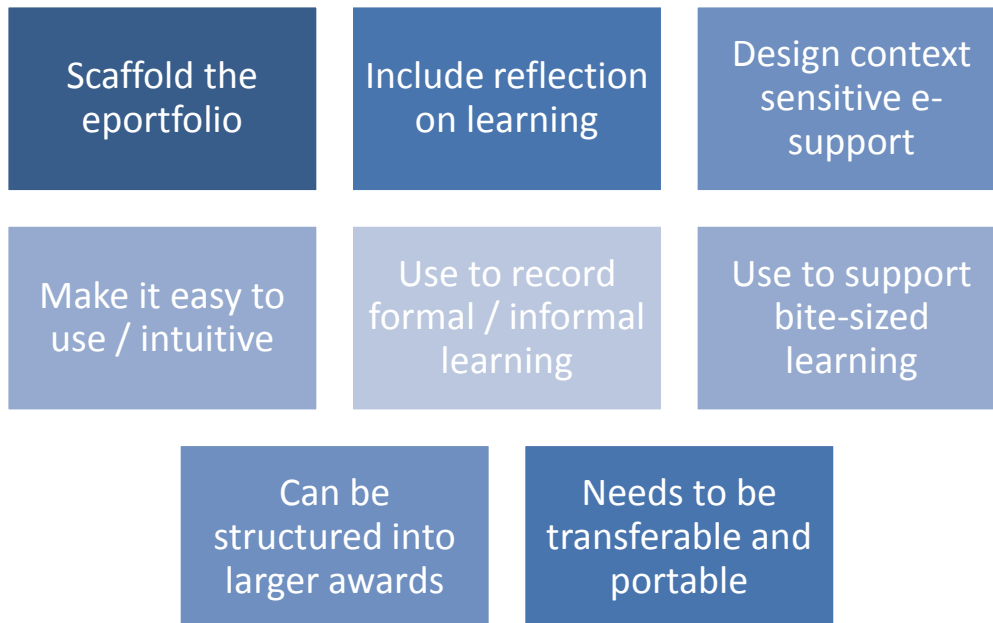
The ePPSME project has identified a new route for learners in the workplace to access HE that can be designed to meet their own and their employers' needs. Learners are able to build their learning within a personal learning system allowing them to develop reflexive practice and include other formal and informal learning episodes.

Learners can study a single unit as a 'taster' before committing to a larger course and can combine units into modules to meet their personal learning needs. Employers can support their employees in providing access to learning opportunities that will benefit their business and that will have minimum impact on employee absence from work; there are no attendance requirements and learning can be accessed to suit the learners', and employers', other commitments.

Speedy quality assurance and validation processes have been developed. These can be used for individual units and a range of CPD activity to ensure fast response and turn-round times as are required by many clients. In addition, it has piloted IT registration and support for learners enrolling on these smaller units of study. Auto-download and auto-publish functions developed to facilitate access to the learning materials are now standard for all users of the software.

2.4 Main Lessons Learnt

The learner and participant experiences have been extrapolated to identify key principles for eportfolio based pedagogies these are:



Evaluations of the project show a widespread interest in the pedagogy and the use of the eportfolio for work-based learners whilst also recognising a preference for some face-to-face activities although this can be through virtual media such as web-conferencing software.

Key to the project's success was the involvement of all key stakeholders throughout the project through the use of a participative action research approach, a member of the University Executive to chair the Steering Group and all key project personnel being full-time employees with time allocated for their involvement in the project.

3 Main Body of Report

3.1 What did you do? (Methodology)

3.1.1 Project context

The University of Wolverhampton has a long term commitment to employer engagement and a significant business in delivering Continuing Professional Development (CPD) to local, regional national and international markets. In 2009 the University's annual income from the delivery of CPD to local businesses was approximately £3 million (it is a key provider of Knowledge Transfer Partnerships (KTPs) and annually has received Lord Stafford Awards for its innovative work with businesses).

The University established a wholly owned subsidiary company to build links to employers and to gather intelligence on learning needs and demands. The University also appointed a work-based learning specialist to work in the Institute for Learning Enhancement who collaborates closely with the subsidiary company, the Blended Learning Unit and a 'work-based learning network' of colleagues representing each of the eight academic Schools. The University has considerable experience of eportfolio uses within the undergraduate and postgraduate curriculum which has been demonstrated through the successful [HEA Pathfinders project](#), which implemented the use of eportfolios across the Level 1 curriculum, through the nationally recognised pool of [eportfolio expertise in the University](#) and through receipt of a platinum award for [global learning impact](#).

Many of the Schools within the University already have strong employer engagement connections, particularly those with direct vocational links such as the School of Health and Wellbeing, School of Education and the School of Technology. Use of eportfolio in the undergraduate and postgraduate curriculum has been widespread in all the Schools for a number of years, and was systematically embedded across the HE Level 4 curriculum from 2008. A review of the undergraduate curriculum in 2009 ensured full, appropriate, engagement with eportfolios across all HE levels from 2010.

3.1.2 What the project set out to do

The aim of this project was to provide the HE sector with reusable models and resources for an eportfolio based pedagogy to address the needs of small to medium-sized enterprise (SME) based learners.

NOTE: *This section highlights the objectives set with an outline of how each objective was achieved. Further explanation on the development of each output is given in subsequent sections of this report.*

The objectives for the project were defined as:

1. to develop processes for:
 - addressing the specific needs of SME based learners linked to the performance needs of the enterprise and the individual learners:

Achieved through the development of "bite-sized" units of learning that can be combined into 20 credit modules; market research with employers identifies initial performance needs; future development will allow self-selection of combinations of ePPSME units (equivalent to 50 notional hours of learner effort) to meet individual learning needs;

- enabling academic teachers to develop responsive, context sensitive, bespoke eportfolio based curricula:

Achieved through use of eportfolio as a combined virtual learning environment and personal learning space which has been used to encourage and support learning and reflection on practice with learning activities designed to draw out tacit knowledge and encourage recording of non-formal, informal and prior experiential learning (see [Demonstration Webfolio](#), [Pilot Unit 2 Webfolio version 2](#)) and development of process within [FLOW validation procedures](#) (see also [Unit/Modules Framework](#)).



Figure 1. Demonstration Webfolio

- the negotiation of eportfolio based learning experiences which have regard for: prior learning, flexible delivery, alignment of individual and organisational needs; confidentiality and ethical frameworks for work-based inquiry.

Achieved through “bite-sized” units of learning that can be combined to meet each individual’s learning needs (see [Unit/Modules Framework](#)); use of an eportfolio that a learner can access through a lifelong learning journey; use of an eportfolio that can be transferred between software applications and that can ‘travel’ with the learner on his learning journey. Each unit is available asynchronously, with learning intended to be completed over a ten week period (equating to approximately five hours effort per week). Learners can access the materials, and post their responses, on a day and time to suit their other commitments. Small units allow wide flexibility in combining units (into 20 credit modules) to meet individual and organisational needs. The eportfolio is owned by the learner and she has control over who sees the content; this can be restricted to the tutor, or extended to others, if the learner chooses to share with others. [Retreat 1](#) explored ethical frameworks and the group feedback informed the design of the pilot units (see [WBL Ethics](#)). The [ePPSME Concept](#) shows the many facets of a work-based learner’s journey that can be ‘captured’ within our eportfolio based pedagogy.

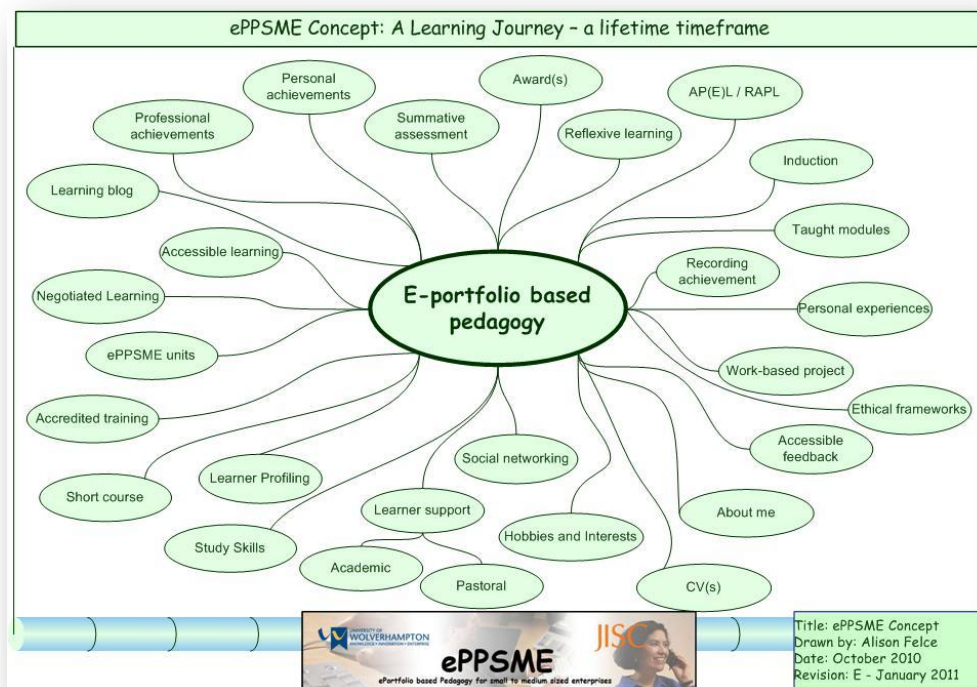


Figure 2. ePPSME Concept

- the speedy passage from learner needs' analysis to deliverable, quality assured curricula.

Achieved through [FLOW validation procedures](#) (see also [Unit/Modules Framework](#)).

- generating a range of work-based learning modules within a flexible accreditation framework.

Achieved through [FLOW validation procedures](#) (see also [Unit/Modules Framework](#)). Within the JISC project four pilot units were developed; outside of the project additional units have been developed – learners will be able to combined individual units and gain HE credits within a 20 credit modular framework. Awards can be negotiated within the University's Combined Studies structure: this is an existing framework within the University.

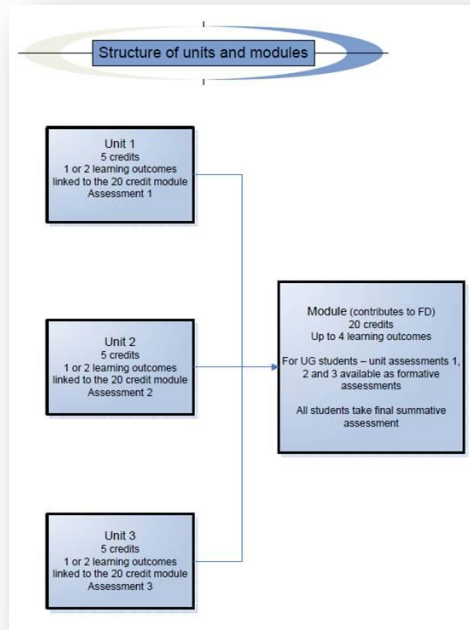


Figure 3. Units/Modules Framework

2. To create and manage a project website.

Achieved through website at <http://www.wlv.ac.uk/eppsme> and [Project Blog](#). Project website includes links to all project outputs (listed above)



Figure 4. ePPSME Project Blog

3. To set up and run a Special Interest Group: dissemination to a wide range of communities achieved through national and international conferences, peer reviewed journal publications and active participation in Benefits Realisation Assemblies.

There has been one amendment to the project objectives in that the Special Interest Group envisaged originally was not set up within the ePPSME framework. A number of alternative opportunities presented themselves during the course of the project to obviate the need for such a group to be developed. The Support, Synthesis and Benefits Realisation project, through its activities and the assemblies it encompassed, provided a number of meetings interspersed throughout the project period where common interests could be shared. Furthermore, the project team were successful in their submission of abstracts to a number of conferences and publications to showcase the project work; involvement in these provided access to a far wider range of audiences than a SIG would have provided.

The ePPSME project set out to build on the existing recognised expertise in the use of eportfolios in the curriculum to offer opportunities to enable access to HE level learning to employees in SMEs who cannot typically access HE due to the lack of time to attend university lectures or to commit to extended periods of part-time study to achieve existing awards. The project was designed to develop learning opportunities that could be accessed from the workplace, that did not involve attendance at face-to-face sessions, that could encompass prior formal and informal learning, that could be built into larger awards and that could be designed to meet employee and employer learning needs. In addition, the project was designed to develop internal systems and processes to facilitate the design and delivery of the learning and provide guidance to learners and academics for future support and development.

The project aimed to work with SMEs within the West Midlands area i.e. organisations with fewer than 250 employees and within approximately 20 mile radius of the University of Wolverhampton. This project was intended as a pilot to include 3 or 4 employers from within the private sector and covering a range of business sectors such as construction, engineering and IT.

3.1.3 Project activities

3.1.3.1 Project management structure

The first project activity was to determine the project management structure and invite membership to represent the key stakeholders in the pedagogy. Two key groups were set up: firstly the Project Steering Group, chaired by the University Pro-Vice Chancellor (Academic) and, secondly, the Project Team led by the Project Director. Membership of these two groups included all key stakeholders in the proposed pedagogy: Pro-Vice Chancellor (Academic), Project Director, External Evaluator, Employer Liaison Unit (Employer and Learner representation), Director of Educational Development Centre, Head of e-Learning, Academic Standards and Quality, IT Services, Learning Information Systems, Registry and Dean of Students (see [Project Management Structure](#)).

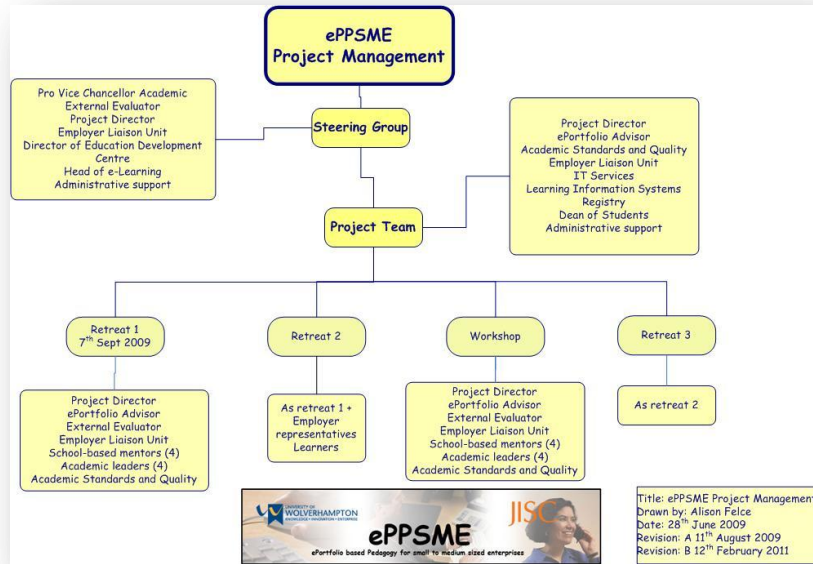


Figure 5. Project Management Structure

An outline timeline was constructed splitting the project into five phases to show visually the intended project activities (see [Project Mind Map](#) and [Project Timeline](#)) and to provide the framework against which the detailed project plan and work packages were developed (see [Project Plan](#) and [Work packages](#)).

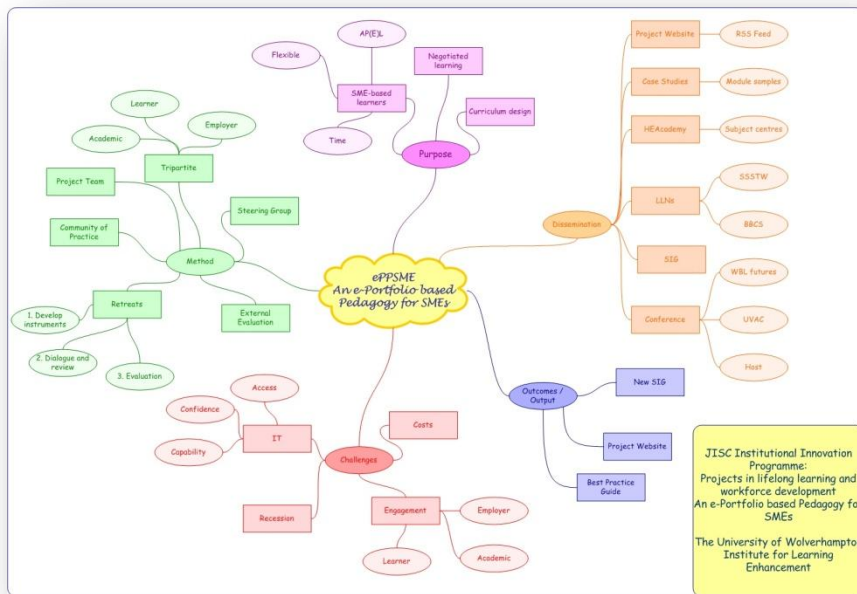


Figure 6. Project Mind Map

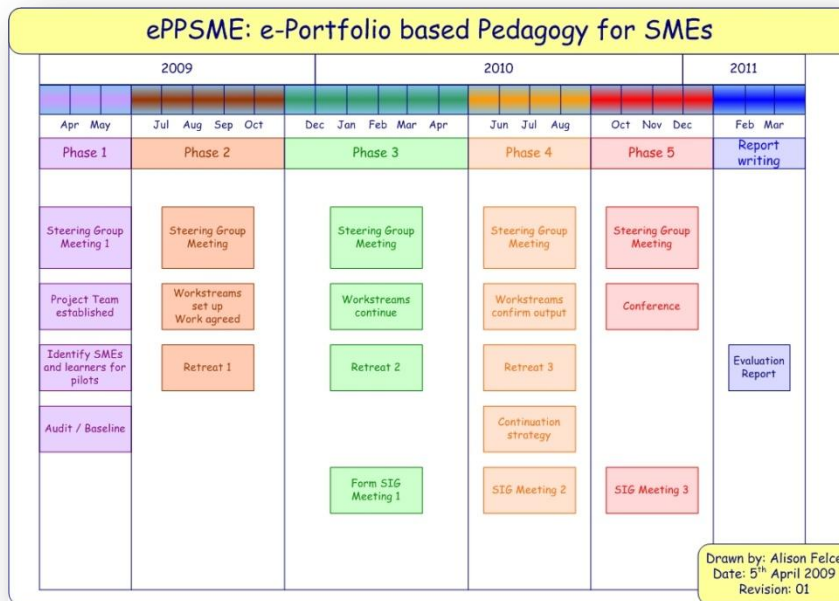


Figure 7. Project Timeline

3.1.3.2 Initial market research; processes and systems

The ePPSME project was designed to develop a pedagogy that would support work-based learners in SMEs and that would provide learning to meet identified needs within the West Midlands area. Consequently our initial project activities began with market research to determine common learning needs within our target group of learners through semi-structured interviews with the employers. We made use of an interview instrument designed by a subsidiary company of the University of Wolverhampton who collated the interview data to provide common learning needs across the participant group which was then used to inform the curriculum design and validation. Whilst this research was on-going, we were starting to develop internal systems and processes to enable the pedagogy; these included quality assurance and validation (see [FLOW document](#) and [Units/Modules Framework](#)), on-line enrolment and payment of fees, access to learning support, learning information systems and a student and IT account. All of these activities were needed for the wider university's work in employer-engagement and we were able to work with the relevant departments to ensure the specific needs of the ePPSME learners were considered and included. We also undertook an audit of existing practice within the University around the current use of eportfolios with learners in the workplace which forms the basis of the [Baseline Report](#), submitted to JISC in July 2009.

3.1.3.3 Tutors and e-mentors for pilots

We wanted to develop a pedagogy that could be used across the University subject areas and planned to pilot learning in a range of these areas. Early indications from the market research showed potential curriculum needs in construction, management and law. In addition to these areas we wanted to see if we could use the same methodology in health (nursing, midwifery, social care) and in a fifth subject area, applied sciences. These five Schools covered a wide range of our provision and allowed us to see if the pedagogy was appropriate to all of it, or if other needs were identified.

Once the baseline report and the initial market research were completed we approached subject specialists in the five Schools along with academics who have expertise in the use of eportfolios in supporting student learning. The eportfolio users we designated as 'eportfolio mentors' mentored the subject experts in developing curricula within the eportfolio tool used at the University; all the mentors had been involved in an earlier project, the [Higher Education Academy Pathfinder Project](#), and we saw an opportunity for them to share their experiences with other non-portfolio users.

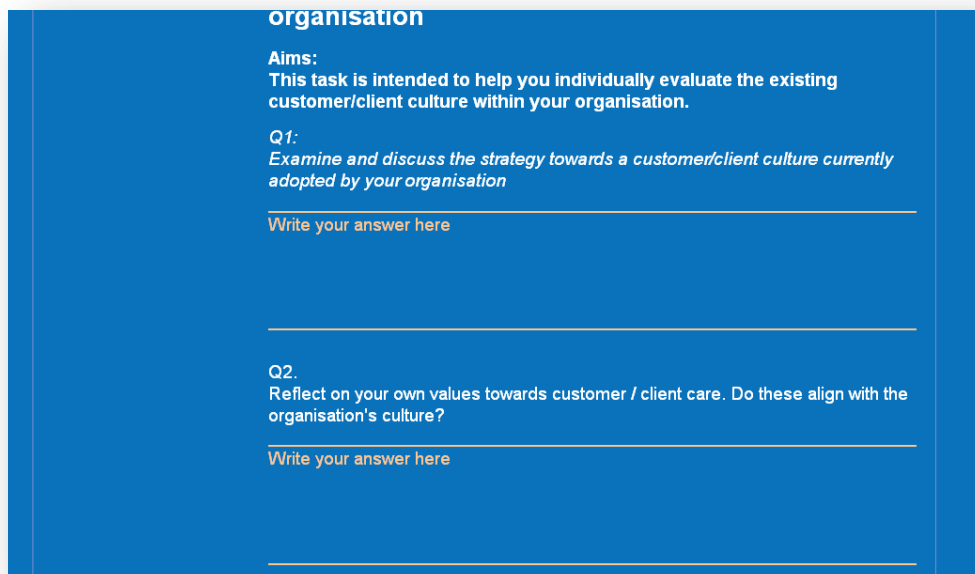
3.1.3.4 Design retreats and curriculum workshops

With the pilot curriculum areas, subject experts and eportfolio mentors identified we set the dates for the design retreats. The first retreat introduced the project to the pilot unit developers and set the context in which the units were to be developed. Participants shared their experience in curriculum design and the use of eportfolios and the curriculum design and quality assurance processes were identified (see [Retreat 1](#)). The second retreat brought feedback and evaluation from the first unit and its learners to inform development of the second and third pilots (see [Retreat 2](#)). The third retreat was designed to draw evaluative commentary and feedback from the work undertaken (see [Retreat 3](#)). We were also able to inform the development of a fourth pilot which ran later than originally anticipated.

In addition to the planned retreats we introduced two further workshops that were needed in between the retreat dates to share learning with the project participants. The first of these was to review progress and development to date on the design and completion of the Learning Needs Analysis, to identify guidelines for users and to discuss staff development needs (see [LNA Workshop](#)). The second workshop was held to discuss the pedagogic principles emerging from the research and to consider the use of a Patchwork Text Methodology for assessment on the units and modules (see [Pedagogy Workshop](#)).

3.1.3.5 Pilot units and webfolio template design

Immediately following the first retreat, the first learning unit was created and piloted with a group of learners, identified from the original market research ([see Pilot Unit 1 Webfolio version 1](#)). It was agreed that a webfolio template would be used to house the learning content and to provide a space in which the learner could add their responses to activities as well as reflect on their current working practice, in relation to the unit being studied. The webfolio design was based on a model that had been used successfully in taught undergraduate courses.



organisation

Aims:
This task is intended to help you individually evaluate the existing customer/client culture within your organisation.

Q1:
Examine and discuss the strategy towards a customer/client culture currently adopted by your organisation

Write your answer here

Q2:
Reflect on your own values towards customer / client care. Do these align with the organisation's culture?

Write your answer here

Figure 8. Pilot Unit 1, Webfolio version 1

Evaluative comments were sought at the mid-point of the unit and at the end of the unit. These comments, plus others identified from correspondence with the tutor, were used to inform the development of the subsequent pilots, firstly in management, then law and finally in environmental waste management.

In the first pilot learners needed to edit the webfolio within the PebblePad environment which caused a range of access problems. The colour scheme used meant that learners' responses were sometimes not visible due to poor contrast between text and background colours; learners did not have the skills with PebblePad to change the appearance of the webfolio. Another consideration for the design team was that learner responses were held within the webfolio. If, at a later date, a learner wanted to refer back to one particular entry they would not be able to link directly to that comment. One of the reasons for choosing PebblePad as the learning environment was the wide range of in-built tools that can create a record of individual learning episodes that can later be built into a reflective narrative. We wanted our learners to be able to start to create a rich repository of their learning activities that could continue to be developed through subsequent ePPSME units, summatively assessed modules and other formal and informal learning opportunities.

Significant changes were made to the framework within which learning content was designed and learner interaction facilitated between the first and second pilots. These changes minimised the need for learners to access the software tool to add comments and was designed to store each entry a learner made as a separate 'asset' in her PebblePad 'store' ([see Pilot Unit 2 Webfolio version 2](#)).



Figure 9. Pilot Unit 2, Webfolio version 2

3.1.3.6 Three learning blogs: Webfolio version 2

In the second version of the webfolio we created two pages for each week on a unit: the first housed the weekly learning materials, the second the weekly activities as a series of blog posts. Learners responded to the blog posts by responding to the set activity. A personal blog space was set up within a webfolio page this was to provide an opportunity for personal reflection and comment as well as for correspondence and dialogue with the tutor. The third learning blog was provided through a collaborative group blog where the tutor would set regular activities for each cohort of learners to contribute. The three types of blog reflect the three 'elements of an educational experience' posited by Garrison, Anderson and Archer (2000:88).

The revised basic webfolio design has been maintained for the second and subsequent pilots with evaluative comments being directed at ways in which the information, advice and guidance can be enhanced, rather than the method of interaction. Since completing the project we have further adapted the way in which we use the template through work we are doing with colleagues in our School of Law, Social Sciences and Communications who are developing a distance learning course in Law that will be delivered totally through PebblePad. In our pilots the webfolio template was downloaded by the learner and became the learner's asset; once downloaded it could not be changed by the tutor. In this Law model the webfolio template remains owned by the tutor which allows changes and updates to be made that are reflected in the version the learner sees ensuring that materials and activities are current and can be adapted to suit learner needs.

3.1.3.7 Accessing the webfolio template

In running the pilot units a consistent barrier to learners was the method by which they needed to log into the eportfolio software, download the template that contains the learning and activities for the unit and then provide the tutor with access to their own input. We created detailed instructions, with screen grabs, but many of the learners only completed the actions needed by being talked through the steps by the University ePortfolio Advisor. Whilst

this was achievable with the small numbers on the pilots, it was not scalable to larger numbers and multiple cohorts. In order to resolve this issue we commissioned the software provider to create 'auto-download' and 'auto-publish' functions, which removed the need to talk learners through. Feedback from learners who have used this function has been positive. These functions are now available to all users of the software (with version 2.4.1 or above) in both the UK and international markets.

3.1.3.8 Information, Advice and Guidance for tutors and learners

Alongside the pilot design, delivery and evaluation we developed a webfolio to provide advice and guidance for tutors working on future units (see [Tutor Design Guidance Webfolio](#)) and one for learner support and guidance (see [Learner Support Webfolio](#)). A 'compatibility checker' was created to allow potential learners to check their computer to see if it has the appropriate software to access the learning; the 'checker' also provides links to download current versions of the relevant software (see [Software Compatibility Checker](#)).



Figure 10. Tutor Design Guidance Webfolio



Figure 11. Learner Support Webfolio

3.1.3.9 Costs of study

Learners who studied on the pilot units were not charged for their involvement but they were asked to commit themselves to providing regular evaluative comments on their learning experiences. Some learners chose to study other units in a module and learners have also signed up for units outside of those run as pilots. Costing for the non-pilot (5 credit) units was 25% of the current part-time module fees for taught, face-to-face courses, hence a learner completing a 20 credit module through our route would pay the same as a student on a classroom based module. Where learners have paid for units, in most cases the fees have been paid by the employer.

3.1.4 Project methodology

The project methodology was based on a participative action research approach to ensure that all key stakeholders were involved at the relevant stages in the pedagogic developments.

3.1.4.1 Project management structure

In order to manage the project we identified a Steering Group, chaired by the University's Pro-Vice Chancellor (Academic) to ensure involvement of the University Executive; knowing from past experience that this is more likely to ensure implementation of any useful findings. The Steering Group had oversight of the major decisions and project developments, while the more detailed management was through a Project Team, chaired by the Project Director who also sat on the Steering Group and thus provided a direct link between the two groups. The Project Team included representatives from all key stakeholders responsible for completion of the project and achievement of the project objectives (see [Project Management](#)).

The key project personnel were all drawn from existing full time staff within the University, which meant that work could start immediately we received confirmation from JISC that our

bid had been successful. The primary project personnel were the Project Director and the ePortfolio Advisor; the Project Director is a curriculum design expert and has a University-wide remit for supporting curriculum development in work-based learning whilst the eportfolio Advisor has a number of years' experience working with academics to embed the use of eportfolios within their teaching and in support of learning.

3.1.4.2 Design retreats and workshops

In order to implement the action research approach we organised a series of design retreats and workshops to develop the pedagogy and associated curricula and to share expectations and experiences from all stakeholders at each stage of the project. These retreats were planned at key stages in the project, firstly to launch the proposed pedagogy that was developed from research on past experiences and the needs of the target group of learners and to set in motion the curriculum development for the first pilot unit. Subsequent retreats were used to share learning and feedback from project experiences to inform the design of other units and to collect and collate evaluative data. The retreats and workshops also provided opportunities to share the on-going developments in the support processes and systems, such as quality assurance and validation and requirements and constraints on learner access to systems.

3.1.4.3 Project evaluation

Formal evaluation has been conducted at key points in the project, including post design retreats, at the mid-point and end points of each pilot unit and with all key stakeholders at the end of the project. Two project officers were appointed to conduct semi-structured interviews with the stakeholder groups (see [Evaluation Interview Questions](#)) and an independent External Evaluator was appointed to provide a third party perspective on the project. The External Evaluator, an expert in work-based learning, sat on the Steering Group and attended the design retreats. Participants in the retreats gave feedback to the External Evaluator who then provided a summary internal report to the Steering Group. The Project Director's Action Plans for each feedback report was also presented to the Steering Group. The Evaluator reviewed all the participant interviews and summarised the responses in a report (see [Evaluation of Project Feedback](#)). The Evaluator's final report was written after the Evaluator had seen the draft of this Final Report (see [External Evaluator's Final Report](#)).

3.1.4.4 Internal / external peer review

All reports written for this project, for both internal and external audiences, are shared with other members of the Project Team and/or Steering Group for peer review and comment. This Final Report has been sent, in draft form, to the JISC Programme Manager who has provided feedback from herself and three colleagues, the feedback has been included in this final version. The draft and amended reports have been reviewed in-house by members of the Project Team and three colleagues not directly involved with the project. The completed final report has been circulated to the Pro Vice-Chancellor with responsibility for employer engagement, the Acting Pro-Vice Chancellor (Academic) and the Vice Chancellor.

3.2 What did you learn?

In this section we highlight the key lessons learnt during the ePPSME project.

3.2.1 An eportfolio based pedagogy can be used for work-based learners

The project has shown that an eportfolio based pedagogy can be used to meet the needs of work-based learners and that, appropriately designed, will support the learner in recording and reporting their learning over a period of time. In common with other learners, those in our target group need to be provided with a structure that scaffolds their learning and that enables access to that learning without creating unnecessary barriers or constraints.

3.2.2 A set of key pedagogic principles for the eportfolio based pedagogy

From our experiences on the project, and feedback from the participants, we extrapolated the pedagogic lessons learnt and from them a set of principles for our eportfolio based pedagogy. These were summarised in section 2.4 and are explained more fully here (see also, Felce and Purnell, 2011, [Mary's Learning Journey video](#) and [UALL Conference Presentation](#)):

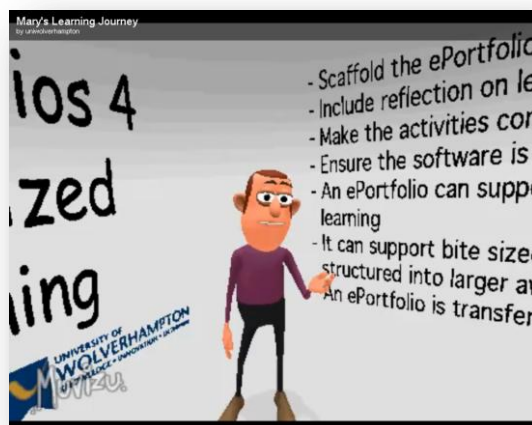


Figure 12. Mary's Learning Journey video

- Scaffold the eportfolio

The benefits of providing structured learning experiences have long been recognised (for example Wood, Bruner and Ross 1976), particularly when learners are new to study and need guidance in moving from being dependent learners to independent ones. This applies equally to the learners on the units as well as the tutors and e-mentors who are entering a new field of pedagogic design. The primary structure was from a webfolio template which provided a familiar environment, in that it appears as a webpage, through which the learners accessed the unit content and typed their responses to activities set. Each webfolio is made up of five elements: information about the unit, learning content, individual activities, a group blog for group activities and space for 1:1 conversations with the academic tutor (see [Demonstration Webfolio](#)). Scaffolding for the academics was provided through sample webfolios and the [Tutor Design Guidance Webfolio](#).

- Include reflection on learning

One of the reasons we proposed the use of an e-portfolio was its potential to enable the development of a reflective approach to learning. We supported the learners in starting to transfer their learning from work into HE and from HE into work by structuring the learning activities to encourage them to reflect on how their work practices related to the unit learning and how one could inform the other. Dialogue with the tutor and the peer group was used to encourage a deeper approach to learning and to start to develop more independent learners. By including opportunities to reflect on learning and to draw on workplace experience we aimed to further support the learning by building their confidence through helping them recognise their existing informal learning and tacit knowledge.

- Design context sensitive e-support

We needed to make sure that the technology we used and the way we used it met the needs of the target learner group. In the first two pilots we provided a telephone helpline and later developed an on-line [Learner Support Webfolio](#). A planned development is the creation of an additional narrated Captivate video which is written for a learner "audience" (see [Narrated Captivate Video](#), this video is intended for an academic audience).

- Make it easy to use / intuitive

We anticipated that learners in our target groups would have limited experience of using computers and might lack confidence in their use. The webfolio format provided a familiar environment for the learners as it appeared as a webpage and required the learners to interact with it in similar ways to common webpages. Learners only need to access the software to open their webfolio in 'view' mode and so are not deterred by trying to learn how to use a new and unfamiliar application. As we start to develop other units in a series we are building in a wider range of functions in the PebblePad software to scaffold the learner's use of it to work towards full interaction and the competence, and confidence, to build their own webfolio.

- Use to record formal / informal learning

An e-portfolio tool can be used to record any and all aspects of a learner's experiences; formal and informal, past and current, lifelong and life-wide. As our learners gain in competence and confidence in their use of the software they will be supported, through scaffolded learning opportunities, to populate their asset store (an 'experiences repository') with records of and reflections on their experiences. The learners will be able to build a rich and deep personal learning record that can provide evidence of the achievement of specified or negotiated learning outcomes.

- Use to support bite-sized learning

We developed the pedagogy to support short courses (50 notional hours of learner effort) that could be designed to meet identified employer and learner needs. We wanted the courses to be available at a time to suit the learner and to fit in with workplace and other demands. The eportfolio environment allows the learner to build their learning over a period of time and to re-enter their personal learning space throughout their lifelong learning journey. Access to and interaction with the University's virtual learning environment is time-restricted and does not allow the learner to record and keep private personal reflections and learning records.

- Can be structured into larger awards

The learner can choose to study one five credit unit, or a series of five credit units, and combine these into modules and build modules into awards. The eportfolio provides the flexibility for a learner to record his episodes of learning, both formal and informal, and return back to them and build on them at a time to suit himself. Our pedagogy has proposed a patchwork text methodology to support the learner in building learning within an individual unit towards a summative assessment in 20 credit blocks. At the end of each unit a learner summarises his learning, its application in his work context and any change of practice that has resulted. A learner who completes a 20 credit module will bring forward the learning from the individual units through a final reflective summary.

- Needs to be transferable and portable

Learners on our units may choose not to continue their studies with the University, they may change employers or link with professional bodies so we needed to ensure that the learning can move with the learner and it needs to be capable of transfer between systems. A learner can export her eportfolio, into a format which can be viewed but not altered, so it is portable; and she can export it into another Leap2A compliant application, making it transferable.

3.2.3 Action research is an effective methodology to enable solutions to be developed

The action research approach we used meant that we were able to test and evaluate our pedagogy through the various pilots, introduce improvements which we then tested and evaluated. Some early users experienced difficulties in obtaining and keeping Student IT accounts, accessing PebblePad and adding their comments to the webfolio. We worked with Registry and IT Services to develop the on-line registration processes and designed on-line self-help opportunities for prospective and actual learners (see [Learner Support Webfolio](#)).

A consistent difficulty was the need for the learners to access the PebblePad software, find the repository containing their webfolio template, download the template to their PebblePad account and then repost it back to the repository. Most of the learners on the first two pilot units had to be talked through this process, individually, step-by-step, which is not a practical, nor cost-effective, solution for large numbers of learners. We resolved this by contracting the software company, Pebble Learning Ltd, to develop an auto-download and auto-publish function which has been tested through the subsequent pilots and is now available to all users of the software worldwide. A compatibility checker (see [Software Compatibility Checker](#)) was developed to enable potential learners to download the relevant software applications to avoid difficulties in accessing PebblePad and the e-materials used within the units.

3.2.4 Our eportfolio based pedagogy was accessible to work-based learners

Learners on the pilot units had a range of experience, confidence and competency in using IT. Key to the pedagogy is an ability to be able to access and use an IT application but beyond this we needed to ensure that the technology did not create a barrier to learning or engagement in the learning. The pilot units developed the use of a webfolio to house all content and learner activities. A webfolio appears to the user as a webpage into which they can add comments and responses to questions whilst, in the background, saving all their input into an individual storage area that can later be accessed and added to, once the learner has developed the skills needed to do so.

Learners expressed a range of opinion including:

Excellent course. The course content and the way it is laid out is wonderful. Easily accessible and really useful for me at this point in my career.

The contents and activities format is easily followed.

The course is easily followed and is being enjoyed.

I think PebblePad is a cracking tool and look forward to building up my eportfolio.

I am new to this way of studying and am finding it quite challenging, the weekly activities seem to be taking longer than the allocated time and some weeks I am finding it quite difficult.



Figure 13. Wordle: Initial Learner Experiences

3.2.5 Learners started to develop a reflexive approach to practice

An important aspect of work-based learning is the development of reflective practice and a reflexive approach to practice. Although each pilot unit was the first in an anticipated series of units we planned to support the learners in starting to reflect on their practice by situating their learning within it. This has been achieved through ensuring that some of the weekly activities encourage the learner to do this.

It has made me look at the culture of our company and this has really made me realise that I am part of the structure shaping the changes in the new culture. It taught me that no business should stand still and if it did it would not survive in business.

I have learnt that sometimes I don't look at customer/clients relationships as long term and this needs to change.



Figure 14. Wordle: Overall Learner Experiences

By including activities that require reflection on practice and through the tutor commentary and responses we have been able to make the learning context sensitive for each learner so that they can see the value of the learning to themselves as an individual and to their organisation as well as to the wider economy, where appropriate. Learners were asked to comment on any business improvement they could identify as a direct result of studying one of the units; some of the responses were:

Being made more aware of keeping people up to date with progress on issues raised - working in customer care and being the sole provider for a whole division means sometimes I am unable to communicate as effectively as I would like but doing this course has proved to me that this is an important part of the role.

More thought being put in to callers' needs.

I have implemented some of the advertising aspects of the unit. The organisation I work in has found this very useful.

My working knowledge of employment law has developed and I am able to actively identify employment law issues when a case arises and direct the HR team or manager to the relevant legislation/regulation.

3.2.6 Mixed opinions about on-line asynchronous learning

Learners engaged with the on-line asynchronous nature of this pedagogy and liked the opportunity to access learning to suit their own availability whilst some would still prefer some face-to-face opportunities, or more contact with the tutor than currently provided. This is demonstrated in the following feedback examples:

Being able to complete it in my own time - not rushed, not pressured. YouTube videos an excellent means of communication.

(The best thing about the unit was) being able to do this from home.

Never had a need to contact the tutor directly.

I was able to contact the Tutor when I needed to but replies and feedback were very limited unless raised as an issue.

I have at times felt quite stressed at not being actually able to talk direct to the tutor.

Responses via blog tend to take time which then puts the added stress on you waiting for a reply. Can be difficult if you are not too computer literate with the internet.

Some employers also expressed a preference for face-to-face learning opportunities:

We have a preference of sending employees on face to face courses and this is also the model of our in house training. For this reason, we would be unlikely to invest in elearning for management training.

3.2.7 An eportfolio can support assessment through a patchwork text methodology

Within the pilots that we undertook for the ePPSME project we were not able to test the pedagogy to bring together a number of units into a credit-bearing module that is summatively assessed. However, we did develop the principles for doing this and the quality assurance and validation processes for a learner to build units into modules (see [Units/Modules framework](#)). At the end of each unit the learner is asked to provide a short narrative that will show how the learning outcomes covered have been achieved, and if appropriate, applied in the workplace. Where a learner chooses to register for a 20-credit module and brings together the learning in completed units a summative assessment task will be set to draw the learning across the units together, using a patchwork text methodology (Winter, 2003; Scoggins and Winter, 1999). Initially, for quality assurance, prescribed units are conflated into a specific module; in future we plan to develop shell modules that will allow learners to conflate their own choice of units into a credit-bearing module so that learning will meet individual needs rather than prescribed opportunities.

3.2.8 Bite-sized units can contribute to an HE award

Each unit takes a notional ten weeks to complete; hence a 20 credit module will take approximately 40 weeks. The emerging pedagogy is appropriate for smaller amounts of credit and for targeting specific learning needs but would not be suitable for constructing larger HE level awards. Findings from the project suggest the units can be an integral part of larger awards but not the sole constituent of them as this would be impractical, in the length of time required and because this would be unlikely to develop the higher level abilities of the learner in the workplace. Initial work to construct units into larger awards, outside of the project, has centred on study on units towards the first module as part of a work-based foundation degree, to introduce work-based learners to HE level study and the use of an eportfolio to support their learning. Subsequent units on this foundation degree will be through a blended approach involving intermittent face-to-face engagement supported by on-line activities through the eportfolio environment.

3.2.9 An eportfolio based pedagogy can support accreditation of prior experiential learning (APEL)

We are also considering other developments where learners can extend their learning through negotiated project work and by providing opportunities for accreditation of prior learning, facilitated through the eportfolio software and using the eportfolio to provide the backbone to the emerging pedagogic models. In late 2009 / early 2010 we ran a small project funded by the [Staffordshire, Stoke-on-Trent, Shropshire, Telford and Wrekin Lifelong Learning Network](#) to develop an eportfolio based on-line application facility for submission of claims for Accreditation of Prior Experiential Learning (APEL) and to access advice and guidance in connection with making such a claim (see [eP4APEL Project website](#)). This on-line tool could be used by work-based learners, such as those in our target group, to construct a claim for APEL, although further development work is needed on it.

3.2.10 We have developed processes and systems to support our target learners

Learners are allocated an IT account, linked to their student number, which allows access to the University services for a minimum of fifteen weeks, starting at the point their first, and subsequent units commence. If a learner chooses not to study further units they are able to export all the material they have created, plus the webfolio, into a range of formats, guidance on what they can do and how to do it is given in the [Learner Support Webfolio](#). Learners who choose to continue to study a 20 credit module are registered as Associate Students, at the point they register for the module, on successful completion of three five credit units. We have not yet developed an automatic process in our Student Management System for this; it is planned as a future enhancement.

3.2.11 The importance of involving key stakeholders

The methods we used, i.e. Steering Group, Project Team, Design Retreats and workshops, within our action research methodology, have proved that it is important to identify and involve all key stakeholders throughout a project to ensure their needs and demands can either be met, or know why they cannot be met. For instance, we included the School of Health and Wellbeing in our project work as this School makes an important contribution to the University and we wanted to determine if it was an appropriate approach for their potential learners. It was recognised that there are benefits in an eportfolio based pedagogy for this group but its use within the context developed in our project does not meet their specific needs; however some of the key principles we identified are likely to be introduced in other developments in the School. The involvement of key stakeholders within and outside the University has ensured that we have a pedagogy that is fit for purpose, that is integrated with the quality assurance, validation and support processes and that can be designed to meet the needs of learners in the SME workforce.

3.2.12 It is beneficial to use a range of evaluation techniques

The External Evaluator provided an independent view of the project. As an expert in work-based learning he offered incisive and constructive input and evaluation which provided positive confirmation of our methodology and outputs. Evaluative comments from retreat participants were more open and frank than they might have been if given to internal staff on the project team.

Regular opportunities to collect evaluative comments from the learners meant that we could continually revisit the emerging pedagogy through the consecutive pilots and the design retreat schedule to allow us to improve our design and outputs.

The use of two project workers to carry out interviews with the project participants meant that a broad range of stakeholders were contacted to obtain the widest possible evaluative commentary on the project and the pedagogy we developed.

The External Evaluator was able to provide an independent overview of the participants' feedback (see [Evaluation of Project Feedback](#)) and of the project as a whole (see [External Evaluator's Final Report](#)).

3.3 Impact

Prior to undertaking this project the University of Wolverhampton did not have a pedagogy to meet or support the needs of learners in small to medium-sized enterprises; nor was there a University-wide approach to designing learning to meet this learner group. The baseline report identified that there was widespread use of eportfolios within taught courses at the University and to support learners on placements as part of prescribed courses; furthermore it showed that learning opportunities for work-based learners centred on bespoke courses, short courses or block delivery of existing courses.

The primary impact of this project to the University of Wolverhampton is that we have a proven approach to designing, validating and delivering learning to meet identified needs of work-based learners in SMEs. We have developed a pedagogy that is being included as part of a professionally accredited foundation degree and plans for its use in other courses.

Some of the curriculum designers had not used eportfolios in their teaching prior to their involvement in the project. As a direct result of their project work they are now identifying potential uses of an eportfolio to support student learning in other areas of their teaching and learning support activities.

The University of Wolverhampton has further developed a number of internal systems and processes such as alternative learner identities, short-term and intermittent access to learner services and quality and validation processes that can be used or adapted to meet other demands for work-based learners. We have drafted regulations for the recognition of the ePPSME units as part of a named award, or a negotiated course, to ensure academic integrity as they are combined into modules and build towards an HE award.

Feedback from learners has shown that most find the tool easy to use and that many have quickly applied their learning in their workplace to make positive enhancements to their organisations. Some learners have chosen not to continue with further studies whilst others have expressed an interest in studying other units; two learners from one pilot group have registered for a HE award, as a result of their positive learning experience. Fifty learners signed up for the pilot units and a further fifty have studied units outside of the pilots.

Findings from the project work and the pedagogy principles established are being used to help inform strategic plans for the future approach to blended and distance learning for all student groups, not solely work-based learners.

Dissemination within the University is primarily via the project website, staff development activities and relevant meetings such as the Work-based and Placement Learning Forum and the Learning and Teaching Working Group.

Throughout the project progress has been reported at a number of dissemination events and in peer-reviewed journals. There has been a lot of interest shown at these events and principles of the pedagogy have been adopted by other institutions, for instance, UWIC in their use of webfolio templates for learning content and activities.

Outputs from the project include the 'auto-download' and 'auto publish' functions within the software to facilitate learner access to, and engagement with, the webfolio template. This function is now available to all users of the software and has transformed this part of the learner experience for teachers and students by removing this perceived barrier and minimising time needed to support the engagement of students, thus allowing more time for supporting learning.

The narrated captivate video that we wrote, for an academic audience, to explain how we have used the eportfolio in the context of the ePPSME project has been viewed by learners on the first unit leading towards the foundation degree mentioned earlier. The learners stated

that they would have found it useful to have seen this video prior to starting their first ePPSME unit. The project team is developing a similar video written specifically for work-based learners; those who are thinking about studying one of our units and those who are about to start a unit. Other feedback we have had from learners, academics and the Project's Steering Group has shown the value of this format for explaining key principles. It has been adopted by the Institute for Learning Enhancement to develop introductory videos for our virtual learning environment, the Wolverhampton On-Line Learning Framework (WOLF) and the eportfolio (PebblePad), which will be available for all students at the University of Wolverhampton to explain the key concepts, functions and uses of these key learning tools.

4 Conclusions & Recommendations

4.1 Report conclusions

Our bid for funding specified a project that was closely aligned to the strategic priorities of the University of Wolverhampton. This alignment was fundamental to the success of the project within the University and the consequential development of processes and systems across the Schools and support departments. The project's management structure included all the key stakeholders within, and outside, the University which ensured all voices could contribute to the emerging pedagogy's design as well as develop enabling systems and processes that would both support the pedagogy and fit with existing practice and other parallel developments. The Steering Group was led by the Pro Vice-Chancellor (Academic) within whose remit pedagogic development is situated; developments in the project were able to be considered in relation to other academic matters and so contributed to wider developments within and across the University.

The participative action research methodology we adopted allowed us to first build on existing good practice within the University and then to adapt our emerging pedagogy, based upon on-going review and evaluation. The three design retreats, and two additional workshops, provided space and time for the project team to review and reflect on their work and to share ideas and experiences. The active participation of all key stakeholders throughout the project impacted positively on the project outputs and achievement of the project objectives.

The Project Team and key participants were all existing staff within the University and were selected for their specialist knowledge in their professional area. We were able to draw on this expertise throughout the project and were not delayed at any point whilst waiting for staff appointments. Staff time was "bought out" through the project / matched funding with most participants contributing more time than was costed because they saw the benefits emerging from the pedagogy we were developing for our target market and for potential new business areas.

From the outset the Project Director wrote detailed plans, maintained comprehensive records and was involved with all aspects of the project. All participants were informed of on-going developments and future plans and she elicited input from each at key points in the project. Key dates, targets and outputs were set and continually reviewed to ensure they were met, or if necessary, revised. Throughout the project we applied to all relevant conferences and workshops to present our initial project plans and our emerging project findings; each presentation considered different aspects of the project; every abstract we submitted was accepted and several led to peer-reviewed journal publications.

We included an External Evaluator in our project team. As an expert in work-based learning he provided an independent perspective of the project as we worked through it and was able to offer constructive and incisive comment at each stage. The use of such an independent observer, supported by the project workers who conducted the participant interviews, ensured that feedback was probably more open and honest and evaluated more objectively than if undertaken by those more closely involved with the project.

4.2 Recommendations

These conclusions inform the following recommendations we make for JISC and other communities:

Align your project to your strategic objectives

Appoint a senior member of staff to lead your Steering Group

Include all relevant key stakeholders in your project

Provide continual opportunities for stakeholder input and feedback

An action research methodology will provide opportunities to test, review and refine your project outputs

Using existing staff as key project participants allows an immediate start on the project and offers potential for continuance of the project outputs post funding

Plan your project in detail and continually review and update your targets; share the plans with the project participants

Submit abstracts to conferences throughout your project to share your developing findings and to seek constructive criticisms

Consider appointing an independent reviewer to provide an objective input.

5 Implications for the future

Alternative uses of the pedagogy have been identified in earlier sections e.g. their use as 'taster' units or as an introductory engagement on foundation degrees. These aspects will be the subject of further work at the University of Wolverhampton and have the potential for development in other institutions to suit their specific needs and strategic priorities. It is anticipated that the review of funding of HE will lead to more students studying part-time, mid-career, at a distance or seeking blended approaches and that there is likely to be further growth into international markets. What we have learned and the principles we have developed, along with the systems and processes now embedded within the University, will inform and support our future curriculum development in the new marketplaces in which we will seek to have an impact.

An important consideration for work-based learners is the potential to accredit prior experiential learning (APEL). We recognised the potential for an eportfolio based pedagogy to enable the recognition and accreditation of prior learning (APL) but were not able to build or prove this aspect of the pedagogy within the pilot structure developed because we

needed to concentrate on the initial engagement of the learner with HE level learning. Having developed a pedagogy that can achieve this we are now piloting an APL application process, within the eportfolio tool. In the same way that the ePPSME model starts to populate the learner's personal learning space, the on-line APL application will do the same, starting with the recording of previous certificated and experiential learning building into a claim for HE level credits, within a scaffolded template and contextualised to the area of interest. Learners on ePPSME units can be supported in preparing APL submissions within an environment with which they are familiar. (see [eP4APEL Project website](#))

All outputs from the project will be maintained within the project website, <http://www.wlv.ac.uk/eppsme>, for a minimum period of three years and will be maintained by the Institute for Learning Enhancement at the University of Wolverhampton. The post-project contact will continue to be the Project Director, Alison Felce, a.e.felce@wlv.ac.uk.

The ePPSME project is leading a Benefits Realisation Project to develop an ePortfolio-based Pedagogies Community of Practice (ePCoP), <http://www.wlv.ac.uk/epcop>, which has set up a virtual community in Cloudworks which will act as a user group once the projects are completed. In addition, interested users can join other JISC fora and/or ELESIG; Pebble Learning Ltd run Pebble Users' Groups, <http://www.pebblepad.co.uk>. Outputs and commentary on the ePCoP project are not included in this report; they will be published via the project website: <http://www.wlv.ac.uk/epcop>.

6 References

Publications referred to:

- Felce, A. E. & Purnell, E. (2011) Innovative curriculum design for work-based learners in small to medium sized enterprises using e-portfolios: Mary's journey using a pensieve, *Work-Based Learning e-Journal*, 1(2), 39-54.
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- Winter, R. (2003) Contextualising the patchwork text: addressing problems of coursework assessment in higher education, *Innovations in Education and Teaching International*, 40(2), 112 - 122.
- Wood, D., Bruner, J. S. & Ross, G. (1976) The role of tutoring in problem solving, *Journal of child psychology and psychiatry*, 17, 89 - 100.

ePPSME Project Website – Home page - 1



The screenshot displays the home page of the ePPSME project website. The header features the University of Wolverhampton logo and navigation links for Site map, Contacts, and Advanced search. A search bar is located in the top right corner. The main navigation menu includes links for HOME, ABOUT US, STUDY HERE, RESEARCH, INTERNATIONAL, ALUMNI, BUSINESS SERVICES, and WORK HERE. A social media sharing bar is present below the navigation. The main content area is titled "An e-Portfolio based Pedagogy for SMEs (ePPSME)" and includes a brief description of the project as one of thirteen projects in the Lifelong Learning and Workforce Development program. A list of links provides further information, including the JISC webpage and JISC cetis summaries. A "Project overview" section describes the project's goals and methodology, mentioning a participative action research approach and the development of an eportfolio tool. A vertical stack of images on the right side of the page shows various project materials, including a poster and several presentation slides.



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An e-Portfolio based Pedagogy for SMEs (ePPSME)

ePPSME is one of the thirteen projects in [Lifelong Learning and Workforce Development](#) funded through part of the [JISC Institutional Innovation Programme](#).

- ▶ Have a look at the [JISC webpage](#) for the project, with links to some of the project publications
- ▶ [JISC cetis](#) have also summarised some of the technical aspects about the ePPSME project.

Project overview

The ePPSME project has provided the Higher Education sector with reusable models and resources for an eportfolio based pedagogy to address the needs of small to medium-sized enterprise-based learners. It has enabled the University to provide HE learning opportunities to work-based learners that are bespoke to the individuals' learning needs whilst being cost-effective and sustainable business for the University. Academic staff have an improved ability to negotiate and provide learning solutions for work-based learners and have been involved in staff development that will enable them to meet the future business of the University.

The project adopted a participative action research approach through a series of design workshops and consecutive pilot study units to develop the use of an eportfolio tool as a virtual learning environment and personal learning space to introduce and develop the learners' reflective practice around targeted learning content. Market research was undertaken to determine common themes in business and learner needs leading to the setting of learning outcomes and content for the study units, each of which equates to 50 notional hours of learner effort. Learners can combine units of study and submit summative assessment to achieve 20 HE credits.

Initial study units in the pilot subjects were based around a webfolio structure using three types of blog-based engagement: individual activity responses, group collaborative discussions, personal critical reflections. Ease of use was achieved through targeting typical skills required for activities such as web-browsing and simple word-processing to avoid deterring learners who lack confidence in their IT competencies.



ePPSME Project Website – Home page - 2

Project Outputs

- ▶ [Reports](#) - Reports that have been submitted to JISC during the project.
- ▶ [Conferences](#) - Video files for all conference presentations.
- ▶ [Publications](#)
- ▶ [Dissemination events](#)
- ▶ [Resources](#) - Resources created during the project including videos, posters and web resources.
- ▶ [ePPSME project blog](#) - A blog based diary of key events and activities.

Aims and objectives

The aim of this project was to provide the HE sector with reusable models and resources for an e-portfolio based pedagogy that addresses the needs of SME based learners.

The objectives were to develop processes for:

- ▶ addressing the specific needs of SME based learners linked to the performance needs of the enterprise and the individual learners.
- ▶ enabling academic teachers to develop responsive, context sensitive, bespoke e-portfolio based curricula.
- ▶ the negotiation of e-portfolio based learning experiences.
- ▶ the speedy passage from learner needs' analysis to deliverable, quality assured curricula. generating a range of work based learning modules within a flexible accreditation framework.
- ▶ generating a range of work-based learning modules within a flexible accreditation framework.



ePPSME Project Website – Home page – 3

Project methodology

This project deployed an action research process over eighteen months using the e-portfolio as an important tool for the reflexivity and transformative learning required. Three retreats were organised: to develop an instrument that can be used to negotiate SME learner needs; a dialogue with SMEs to devise reflexive, transformative work based learning and evaluation of the negotiation and delivery processes having particular regard for: QA processes, technical/infrastructural/resourcing issues, administrative burdens, ethical and privacy issues, design challenges, accreditation frameworks, progression pathways (through foundation degrees to higher qualifications, including masters), learner and employer experiences.

Impact and benefits

The ePPSME project has identified a new route for learners in the workplace to access HE that can be designed to meet their own and their employers' needs. Learners are able to build their learning within a personal learning system allowing them to develop reflexive practice and include other formal and informal learning episodes.

Learners can study a single unit as a 'taster' before committing to a larger course and can combine units into modules to meet their personal learning needs. Employers can support their employees in providing access to learning opportunities that will benefit their business and that will have minimum impact on employee absence from work; there are no attendance requirements and learning can be accessed to suit the learners', and employers', other commitments.

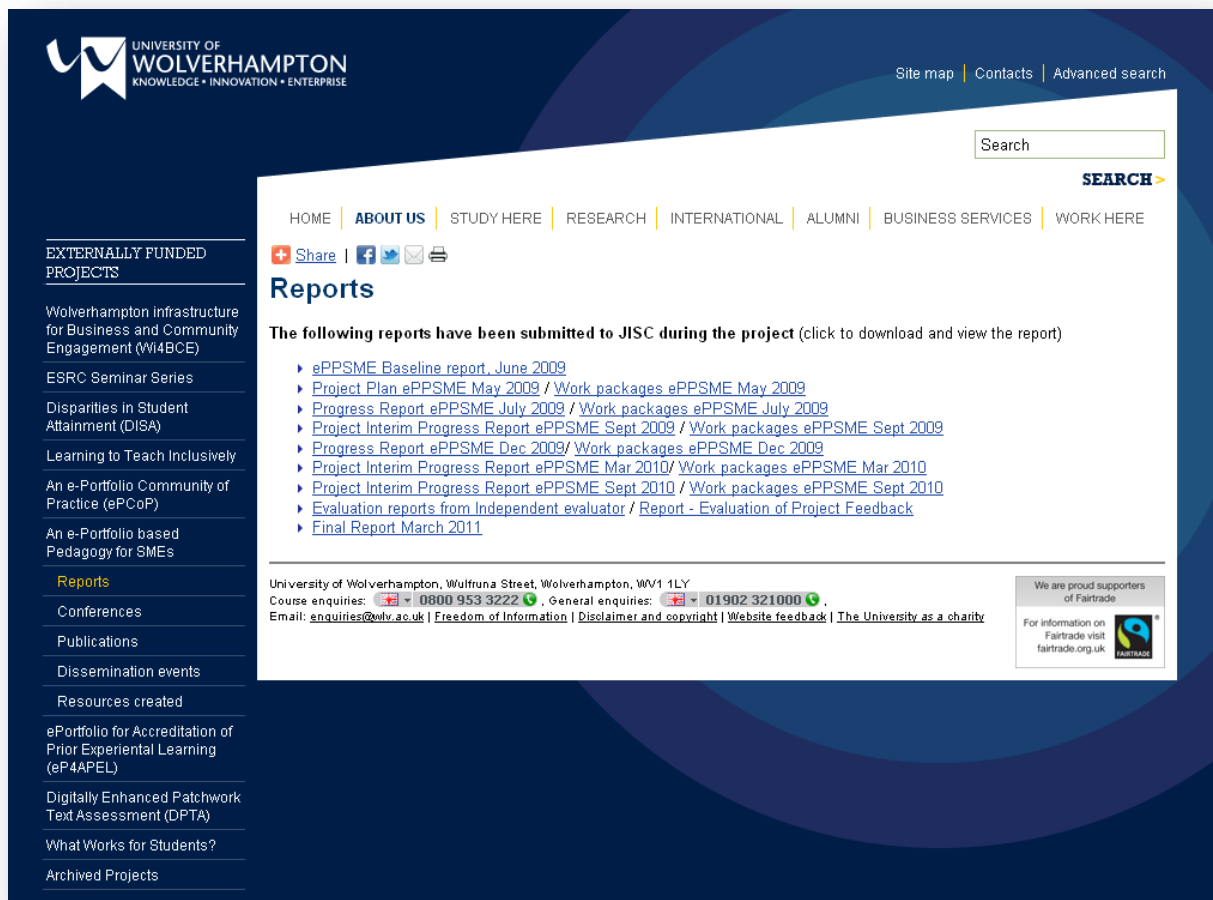
Speedy quality assurance and validation processes have been developed. These can be used for individual units and a range of CPD activity to ensure fast response and turn-round times as are required by many clients. In addition, it has piloted IT registration and support for learners enrolling on these smaller units of study. Auto-download and auto-publish functions developed to facilitate access to the learning materials are now standard for all users of the software.

Stakeholder evaluations

Evaluations of the project show a widespread interest in the pedagogy and the use of the eportfolio for work-based learners whilst also recognising a preference for some face-to-face activities although this can be through virtual media such as web-conferencing software.

Key to the project's success was the involvement of all key stakeholders throughout the project through the use of a participative action research approach, a member of the University Executive to chair the Steering Group and all key project personnel being full-time employees with time allocated for their involvement in the project.

ePPSME Project Website – Reports page



The screenshot shows the 'Reports' page of the ePPSME Project Website. The page has a dark blue header with the University of Wolverhampton logo and navigation links. A search bar is located in the top right. The main content area is white and features a list of reports submitted to JISC. A sidebar on the left contains a list of 'Externally Funded Projects'. The footer includes contact information and a Fairtrade logo.





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Reports


The following reports have been submitted to JISC during the project (click to download and view the report)

- ▶ [ePPSME Baseline report, June 2009](#)
- ▶ [Project Plan ePPSME May 2009 / Work packages ePPSME May 2009](#)
- ▶ [Progress Report ePPSME July 2009 / Work packages ePPSME July 2009](#)
- ▶ [Project Interim Progress Report ePPSME Sept 2009 / Work packages ePPSME Sept 2009](#)
- ▶ [Progress Report ePPSME Dec 2009/ Work packages ePPSME Dec 2009](#)
- ▶ [Project Interim Progress Report ePPSME Mar 2010/ Work packages ePPSME Mar 2010](#)
- ▶ [Project Interim Progress Report ePPSME Sept 2010 / Work packages ePPSME Sept 2010](#)
- ▶ [Evaluation reports from Independent evaluator / Report - Evaluation of Project Feedback](#)
- ▶ [Final Report March 2011](#)

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ePPSME Project Website – Conferences page

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Conferences

Links provided to video file of presentations. (Note these are not narrated)

2010 Conferences

The links provided are for video files of the presentations. (Please note these are not narrated)

April

- JISC Conference, London. Demonstration. [Exploring an embryonic pedagogy.](#)
- Work-based Learning Futures 4, Middlesex University. Presentation/Conference Proceedings. [Changing policies, their impact on the provision of work-based learning and the development of an e-portfolio based pedagogy for WBL.](#)
- Centre for Excellence in Professional Placement Learning, Plymouth. Presentation. [Using blogs within an e-portfolio pedagogy to support and enable work-based learners.](#)
- Centre for Recording Achievement, Nottingham. Presentation. [An e-portfolio based pedagogy for work-based learners.](#)

June

- Pebblebash, Shifnal. Presentation/Conference Proceedings. [Developing an e-portfolio pedagogy for small and medium sized enterprises.](#)
- Professional, Vocational and Workplace Learning, Cyprus. Presentation/Conference Proceedings. [Cross-university collaboration for work-place learning: a case study.](#) (Paper presented previous developments and showed how these linked with ePPSME project).

July

- The Work Based Learning Network of the Universities Association for Lifelong Learning (UALL), Annual Conference, Teesside. Presentation/Conference Proceedings. [Innovative curriculum design: Mary's journey in a pensieve.](#)

September

- Alt-C, Nottingham. Presentation. [The design and implementation of an e-portfolio based pedagogy to enable work-based learners.](#)

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Key information

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INTERACTIVE MAP

EXTERNALLY FUNDED PROJECTS

- Wolverhampton infrastructure for Business and Community Engagement (W4BCE)
- ESRC Seminar Series
- Disparities in Student Attainment (DISA)
- Learning to Teach Inclusively
- An e-Portfolio Community of Practice (ePCoP)
- An e-Portfolio based Pedagogy for SMEs
- Reports
- Conferences**
- Publications
- Dissemination events
- Resources created
- ePortfolio for Accreditation of Prior Experiential Learning (eP4APEL)
- Digitally Enhanced Patchwork Text Assessment (DPTA)
- What Works for Students?
- Archived Projects

November

- JISC, Innovating e-learning. On-line conference. Have-a-go demonstration. [Using e-portfolios for work-based learners in SMEs.](#) ([Narrated video](#) and [demo web-folio](#)).

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ePPSME Project Website – Publications

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Publications

- ▶ May 2010 – HE5P Case Study
- ▶ Felce, A. E. & Pumell, E. (2010) Using an e-portfolio based pedagogy for work-based learners: Action research and emerging practice, PDP and e-Portfolio UK newsletter, 19, 4 - 5. Available online at: <http://www.recordingachievement.org/news-and-events/publications/pdpuk.html> (accessed 18th February 2011).
- ▶ Felce, A. E. & Pumell, E. (2010) Developing an e-portfolio pedagogy for small and medium sized enterprises. Available online at: <http://www.pebblepad.co.uk/pp2010/cs01.pdf> (accessed 11th February 2011).
- ▶ November 2010 – Technology Enhanced Employability and Employee Learning: a staff guide (http://www.leedsmet.ac.uk/101213_7595_STEEL_Web.pdf).
- ▶ Felce, A. E. (2011) Cross-university collaboration for work-place learning: a case study, Higher Education, Skills and Work-based Learning, 1(1), 63-77. [<http://www.emeraldinsight.com/products/journals/journals.htm?id=heswtl>].
- ▶ Felce, A. E. & Pumell, E. (2011) Innovative curriculum design for work-based learners in small to medium sized enterprises using e-portfolios: Mary's journey using a pensieve, Work-Based Learning e-Journal, 1(2), 39-54. [<http://wblearning-ejournal.com/currentissue.php>].
- ▶ Felce, A. E. & Pumell, E. (forthcoming) Changing policies, their impact on the provision of work-based learning and the development of an e-portfolio based pedagogy for WBL, Higher Education, Skills and Work-based Learning.
- ▶ Under consideration for inclusion in planned publication: "Pebblegogy" Felce, A. E. & Pumell, E. Designing Learning for Work-based Learners, in: S. Sutherland (Ed) Pebblegogy.

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ePPSME Project Website – Dissemination events

The screenshot displays the website's layout. At the top left is the University of Wolverhampton logo with the tagline 'KNOWLEDGE • INNOVATION • ENTERPRISE'. To the right are links for 'Site map', 'Contacts', and 'Advanced search'. A search bar is located in the top right. Below the navigation bar are links for 'HOME', 'ABOUT US', 'STUDY HERE', 'RESEARCH', 'INTERNATIONAL', 'ALUMNI', 'BUSINESS SERVICES', and 'WORK HERE'. A social media share bar includes a '+ Share' button and icons for Facebook, Twitter, LinkedIn, and Email. The main content area is titled 'Dissemination events' and is organized by year: 2009, 2010, and 2011. A sidebar on the left lists various project categories, with 'Dissemination events' highlighted in orange. On the right side, there are three promotional banners: 'Order a Prospectus', 'Tuition Fees 2012', and 'Apply to us'. Below the 'Apply to us' banner is an 'INTERACTIVE MAP' with a yellow arrow pointing to a location.

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Dissemination events

2009

Project start-up publicity

- ▶ Radio interview with Beacon Radio
- ▶ Press Release in Birmingham Evening Mail
- ▶ Press Release in Yorkshire Post
- ▶ Press Release in Express and Star
- ▶ [Press Release in Scotsman](#)
- ▶ University of Wolverhampton [Press Release](#) and [news banner](#).

2010

- ▶ **January 2010**, University of Gloucestershire - Co-Gen Assembly - [Academic accreditation frameworks](#)
- ▶ **February 2010**, University of Central Lancashire - Telstar Assembly –APEL / PebblePad
- ▶ **April 2010**, Wolverhampton Science Park – Staffordshire, Shropshire, Stoke-on-Trent and Telford and Wrekin Lifelong Learning Network – Innovative methods of work-based assessment – workshops: [Assessment of WBL using an e-portfolio pedagogy](#)
- ▶ **September 2010** – Case study/evidence in response to request from million+: Research that Matters
- ▶ **October 2010**, Oxford - [Festival of Assemblies](#) – Trade Fair and Workshop
- ▶ **December 2010**, Leeds – STEEL the showcase seminar. [Presentation / Case Study in Technology Enhanced Employability and Employee Learning: a staff guide](#)

2011

- ▶ **JISC Assembly - January 2011**
- ▶ In January 2011 Alison Felce and Emma Purnell represented the ePPSME project at University of Wales Institute, Cardiff (UWIC) Assembly on Impact and Sustainability.

Alison gave a short presentation on the ePPSME and ePCoP projects which can be viewed, along with the other presentations, at the [UWIC JISC Projects library](#).

Order a Prospectus

Tuition Fees 2012

Key information

Apply to us

INTERACTIVE MAP

Externally Funded Projects

Wolverhampton infrastructure for Business and Community Engagement (WIBCE)

ESRC Seminar Series

Disparities in Student Attainment (DISA)

Learning to Teach Inclusively

An e-Portfolio Community of Practice (ePCoP)

An e-Portfolio based Pedagogy for SMEs

Reports

Conferences

Publications

Dissemination events

Resources created

ePortfolio for Accreditation of Prior Experiential Learning (ePAPEL)

Digitally Enhanced Patchwork Text Assessment (DPTA)

What Works for Students?

Archived Projects

ePPSME Project Website – Resources created - 1

The screenshot displays the ePPSME Project Website interface. At the top right, there is a search bar with the text "Search" and a "SEARCH >" button. Below this is a horizontal navigation menu with links: HOME, ABOUT US, STUDY HERE, RESEARCH, INTERNATIONAL, ALUMNI, BUSINESS SERVICES, and WORK HERE. A social media sharing bar includes a "+" icon, "Share", and icons for Facebook, Twitter, LinkedIn, and Print.

The main content area is titled "Resources Created" and "Videos". The first video is "Developing an ePortfolio based Pedagogy: introduction to project May 2010". The description states: "This video outlines the project aims and methodology to develop an e-portfolio based pedagogy for work-based learners in small to medium sized enterprises. An outline of the pedagogy is given and a learner presents her evaluation." The video player shows a woman speaking.

The second video is "Mary's Learning Journey". The description states: "This short animation depicts the activities involved in studying for an ePPSME unit, seen through the eyes of a typical work-based learner developed from a composite of learners in small to medium sized enterprises who took part in the project." The video player shows a cartoon character and the text "ePortfolios 4 bite-sized learning" and "IISC WOLVERHAMPTON".

On the right side of the page, there are four promotional cards: "Order a Prospectus" (blue background), "Tuition Fees 2012" (purple background with "Key information" below it), "Apply to us" (blue background with a white arrow), and "INTERACTIVE MAP" (grey background with a yellow arrow pointing to a map).

The left sidebar contains a navigation menu under the heading "EXTERNALLY FUNDED PROJECTS". The items listed are: Wolverhampton infrastructure for Business and Community Engagement (Wi4BCE), ESRC Seminar Series, Disparities in Student Attainment (DISA), Learning to Teach Inclusively, An e-Portfolio Community of Practice (ePCoP), An e-Portfolio based Pedagogy for SMEs, Reports, Conferences, Publications, Dissemination events, Resources created, ePortfolio for Accreditation of Prior Experiential Learning (eP4APEL), Digitally Enhanced Patchwork Text Assessment (DPTA), What Works for Students?, and Archived Projects.

ePPSME Project Website – Resources created - 2

ePPSME Video interview at Festival of Assemblies, Oct 2010

Have a look at the video interview with Alison Felce and Emma Purnell from the ePPSME project at the [JISC Institutional Innovation Festival of Assemblies](#) on the 20th of October. The video about ePPSME follows on from the HELLO project.



ePPSME Video Demonstration

The principles of the pedagogy for the design of the 5 credit units within an e-portfolio for work-based learners in SMEs is explained in this [narrated captivate video](#).

This video has been written for an academic audience to explain how we have used the eportfolio in this context. The project team is developing a similar video written specifically for work-based learners; those who are thinking about studying one of our units and those who are about to start a unit. A link to the video will be include in this section.

Feedback we have had from learners, academics, the project's Steering Group and others has shown the value of this format for explaining key principles. It has been adopted by the Institute for Learning Enhancement to develop introductory videos for our virtual learning environment, the Wolverhampton On-Line Learning Framework (WOLF) and the eportfolio (PebblePad), that will be available for all students at the University of Wolverhampton to explain the key concepts, functions and uses of these key learning tools. Links to the videos will be include in this section.

Posters

- ▶ [ePPSME mind map, May 2009](#)
- ▶ [ePPSME timeline, May 2009](#)
- ▶ [ePPSME project management, Feb 2011](#)
- ▶ [ePPSME concept, Jan 2011](#)
- ▶ [ePPSME frameworks, Feb 2011](#)
- ▶ [ePPSME poster 1: Project overview, Feb 2010](#)
- ▶ [ePPSME poster 2: A developing pedagogy, April 2010](#)
- ▶ [ePPSME poster 3: ePPSME development, May 2010](#)
- ▶ [ePPSME poster 4: ePPSME project overview May 2010](#)
- ▶ [ePPSME poster 5: ePPSME project findings March 2011](#)

ePPSME Project Website – Resources created - 3

Web resources

ePPSME project website: <http://www.wlv.ac.uk/eppsme>





ePPSME project blog: Current progress reports are available through the [ePPSME project blog](#)

- ▶ [Demonstration web-folio](#)
- ▶ [Tutor design guidance web-folio](#)
- ▶ [Weekly content checklist](#)
- ▶ [Learner progress record](#)
- ▶ [Learner journey process map](#)
- ▶ [Units/Modules framework](#)
- ▶ [Learner support web-folio](#)
- ▶ [Software compatibility checker](#)

Software development

As part of the project we worked with Pebble Learning Ltd to develop **auto-download** and **auto-publish** functions to overcome problems students were encountering in accessing their learning materials. These functions have now been rolled out across all PebblePad users (with version 2.4.1 or above) in both the UK and international markets. It is being used for traditional taught programmes in Higher Education and Further Education as well as for Continuing Professional Development and our original target group, work-based learners.

University of Wolverhampton, Wulfruna Street, Wolverhampton, WV1 1LY

Course enquiries:  0800 953 3222  , General enquiries:  01902 321000 

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JISC Project Plan

Overview of Project

1. Background

The University of Wolverhampton has a long term commitment to employer engagement and a significant business in delivering CPD to local, regional national and international markets. Currently the University's annual income from the delivery of CPD to local businesses is approximately £3 million. In addition, the university is 'top provider of Knowledge Transfer Partnerships (KTPs) in the West Midlands'¹ In 2007 the university received two Lord Stafford Awards for its innovative work with businesses.

The University established a company (i-CD) to build links to employers and to gather intelligence on learning needs and demands. The University also appointed a work based learning specialist to work in the Institute for Learning Enhancement and to collaborate closely with i-CD, the Blended Learning Unit and with a 'work-based learning network' of colleagues representing each of the ten academic Schools. The Blended Learning Unit has considerable experience of e-portfolio within the undergraduate and postgraduate curriculum. This has been demonstrated through the successful HEA Pathfinders project², which implemented the use of e-Portfolios across the Level 1 curriculum, and through the nationally recognised pool of ePortfolio expertise in the University³.

Schools already have strong employer engaged links, particularly those with direct vocational links such as the School of Health. The project will work with the 'work based learning network' and with Technology Supported Learning Coordinators in Schools to develop appropriate curriculum based on e-portfolio supported learning. Use of e-portfolio in the undergraduate and postgraduate curriculum is already widespread in all our Schools, and systematically across the Level 1 curriculum.

2. Aims and Objectives

2.1 Aim

The aim of this project is to provide the HE sector with reusable models and resources for an e-portfolio based pedagogy that will address the needs of SME based learners.

2.2 Objectives

The objectives for the project are:

1. to develop processes for:
 - addressing the specific needs of SME based learners linked to the performance needs of the enterprise and the individual learners.
 - enabling academic teachers to develop responsive, context sensitive, bespoke e-portfolio based curricula.

¹ <http://wlv.ac.uk/PDF/mac-ar-2007.pdf>

² <http://eportfolio.wlv.ac.uk/viewasset.aspx?oid=294048&type=blog>

³ <http://www.jisc.ac.uk/media/documents/publications/effectivepracticeportfolios.pdf>

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- the negotiation of e-portfolio based learning experiences which have regard for: prior learning, flexible delivery, alignment of individual and organisational needs; confidentiality and ethical frameworks for work based inquiry.
 - the speedy passage from learner needs' analysis to deliverable, quality assured curricula.
 - generating a range of work based learning modules within a flexible accreditation framework.
2. To create and manage a project website
 3. To set up and run a Special Interest Group

3. Overall Approach

3.1 Strategy/Methodology

This project will deploy an action research process over eighteen months. Three retreats will be organised for each critical stage of the development cycle: the first critical stage will be to develop an instrument that can be used to negotiate SME learner needs; this instrument will be used as the basis for developing a dialogue with SME employers/employees both about the performance needs of their organisation and that of individual learners. The next critical aim will be to use the performance needs analysis to devise reflexive, transformative work based learning by which we mean: a) 'a learning process of 'becoming critically aware of one's own tacit assumptions and expectations and those of others' (Mezirow, 2000:4); and b) learning that is rooted in forms of work based inquiry that are transformative for the organisation as well as for the learner.

The e-portfolio will be an important tool for the reflexivity and transformative learning required firstly because we expect much of the learning to be flexibly delivered, affordable, e-learning and second, because e-portfolio enables learners to articulate record and reflect on formal and informal learning experiences, providing a safe and supportive environment for learners to stitch together episodes of learning to better enable them to make sense of their learning from a holistic viewpoint. Eportfolio is especially able to support learners through transitions.

The final critical aim of the project will be to evaluate the negotiation and delivery processes having particular regard for: QA processes, technical/infrastructural/resourcing issues, administrative burdens, ethical and privacy issues, design challenges, accreditation frameworks, progression pathways (through foundation degrees to higher qualifications, including masters), learner and employer experiences. The following provides an outline of key action research activities and phases.

3.2 Scope and Boundaries

The project will work with SMEs within the West Midlands area i.e. organisations with fewer than 250 employees and within approximately 20 mile radius of the University of Wolverhampton. This project is intended as a pilot and will include 3 or 4 employers, probably from within the private sector. It is intended that within these pilots there will be a range of business sectors such as construction, engineering and IT.

3.3 Critical Success Factors

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- 1) the development of the performance and learner needs analysis processes to ensure scalability and sustainability across a range of business areas and with a range of types and sizes of employers
- 2) positive evaluation by the pilot groups and confirmation that the processes have worked in the way intended and that learner and performance needs have been, or it is still anticipated that they will be met
- 3) the systems and processes enable identified needs and solutions to be available to meet the timescales required
- 4) the e-portfolio tools developed provide a solution that is scalable and sustainable.

4. Project Outputs

4.1 Deliverables

- 1) **A process for** addressing the specific needs of SME based learners which are directly linked to the performance needs of the enterprise, as well as individual learners.
- 2) **A process for** enabling academic teachers to develop responsive, context sensitive, bespoke e-portfolio based curricula.
- 3) **A process for** the negotiation of e-portfolio based learning experiences which have regard for: prior learning (informal and formal), recording achievement, flexible delivery, alignment of individual and organisational learning/performance needs; confidentiality and ethical frameworks for work based inquiry.
- 4) **A process for** the speedy passage from learner and workplace performance needs' analysis to deliverable, quality assured curricula.
- 5) **A process for** generating a range of work based learning undergraduate modules within a flexible accreditation framework.
- 6) **A project website** (this project will be hosted and maintained by the University beyond the period of the project cycle) containing documents which describe necessary sequences and the challenges each of the above processes presented above, namely:
 - i. Models of a negotiated approach for performance and learning needs analysis in an SME with supporting training materials for learning consultants
 - ii. Teacher development materials for making sense of needs/performance analysis information to support work based learning supported by e-portfolio.
 - iii. Templates for light touch, speedy Quality Assurance which builds a flexible, marketable set of learning units.
 - iv. Resources relating to e-portfolio pedagogic techniques applicable to SMEs specifically, profiling tools, critical incident gathering, blogs, learner created webfolios, learning journals, and uses of scaffolded templates.

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- v. Work based inquiry (ways of uniting the interests of the workplace with that of the individual learner)
 - vi. Accrediting informal learning (APEL, ways of valuing and harnessing informal learning to formal learning)
- 7) **Establishment of a Special Interest Group**, which we would lead and the hosting of associated workshops on e-portfolio based SME pedagogy. It is anticipated that this SIG would work closely with the Higher Education Academy.

4.2 Knowledge and other outputs

- 1) The required adaptation of current knowledge and use of e-portfolio for use with work-based learners
- 2) Increased knowledge and understanding of employer engagement and how HE can identify and support learner needs
- 3) Development of a work-based learning community within the university to share good practice and grow the community within and outside the organisation
- 4) Potential for consultancy work with other HEIs in introducing an e-portfolio based pedagogy within their business
- 5) Written articles at conferences and within peer reviewed journals as well as dissemination through existing networks such as LLNs and HEA Subject Centres
- 6) Hosting of conference at end of the project.

5. Project Outcomes

The successful completion of this project will enable the university to provide HE learning opportunities that are accessible to work-based learners, that are bespoke to the individuals' learning needs whilst being cost-effective and sustainable business for the university.

Academic staff will be better able to negotiate and provide learning solutions and will have been involved in staff development to enable them to meet the future business of the university.

The university, and the wider HE community, will have access to a proven pedagogy for identifying and meeting the needs of work-based learners.

6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
Internal		
University Executive	Increasing engagement with work based learners to create new business opportunities and income streams to replace losses due to funding bodies changing priorities	High
Academic Staff	Need to understand new pedagogies, be able to work within technologies and be able to respond to needs of work-based learners	High
University support services e.g. Registry,	New processes and pedagogy	High

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Learning information, IT services	needs to fit within existing systems, or they must be able to develop to meet the new demands	
Students / work-based learners	Need to be able to access and use the technology	High
Intelligent Career Development (iCD)	Understanding of the pedagogy and its application with work-based learners; be able to use the processes developed for identifying learner and employer needs	Medium
External		
Lifelong Learning Networks	Have basic understanding of the pedagogy to be able to help disseminate its use with SMEs	Low
Small-Medium Enterprises	Be able to access the technology and to support their work-based learners	Medium
Other HEIs and FECs	To apply within their own institution	Low
e-Portfolio software developers	To provide input into any software development required to meet work-based learners needs; To raise awareness of this application for their software	Medium Low
Quality Assurance Agency (QAA)	Access to "light touch" QA processes developed as part of the project for QAA dissemination to the sector	Low

7. Risk Analysis

<List factors that could pose a risk to the project's success, assess their likelihood and severity, and how you will prevent them from happening (or manage them if they if they occur). Cover the types of risks listed and any others that apply.>

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Staffing				
Key staff leave	1	5	5	Deputies have been identified
Organisational	1	5	5	Project has full Executive approval;
Schools reluctant to engage				
Technical				
Software is not available	1	3	3	e-portfolio software currently being used is the market leader and the university has a long-term successful relationship with the software house
External suppliers				wide range of potential employers

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SMEs unwilling to engage	2	2	4	for pilot already identified; access to existing employer networks if additional SMEs needed.
Learner engagement with e-portfolio is minimal	3	3	9	e-mentoring support is available to assist those who are not engaging
Legal Legal issues with employer documents	1	2	2	Use university legal support and JISC legal

8. Standards

** to be discussed with JISC Programme Manager**

Name of standard or specification	Version	Notes

9. Technical Development

** to be discussed with JISC Programme Manager**

10. Intellectual Property Rights

IPR generated by the project will be considered a community resource and will be distributed to the learning community in the most effective means on advisement from the JISC.

Project Resources

11. Project Partners

Not applicable

12. Project Management

A Project Steering Group has been set up, its first meeting will be held on 19th May 2009. The group will meet at the start of each of the five phases of the project.

A project team has been set up to manage the day-to-day work on the project and report at least monthly to the Steering group. The first formal meeting for the project team is 18th May 2009.

An external evaluator will be involved in the three retreats and will sit on the steering group. He will provide written reports to the steering group and project team as well as an overall project interim and final evaluation report. Both the steering group and project team will

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discuss potential additional members at their first meetings e.g. representation from local SMEs and University support services.

Membership of the steering group is:

Professor Sally Glen, PVC (Academic); (Chair of steering group)
Alison Felce, Project Manager;
Kim White, CEO of iCD Ltd;
Dr Dave Johnson, External Evaluator
Professor Glynis Cousin, Director Institute for Learning Enhancement

Project Manager (40% time spend on this project):

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No training needs are currently identified for the project team.

13. Programme Support

No programme support needs are currently identified however these will be continually reviewed and the programme manager advised as soon as a need is identified.

14. Budget

See Appendix A.

Detailed Project Planning

15. Workpackages

See Appendix B.

16. Evaluation Plan

The project manager will set up and maintain a project blog to which all members of the project team will be encourage to contribute. Each phase of the project and key stages within each phase, for instance the retreats, will be internally evaluated to ensure that the intended outcomes were achieved and to identify any changes needed to the remainder of the project. In addition to the internal evaluation the project includes an independent external evaluator, a specialist in work-based learning, who will prepare written reports at key stages in the project. Employers and learners involved in the project will also be asked to evaluate it.

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
End of each phase	Have we achieved the aims and objectives of this phase?	Do we have stakeholder involvement? Have the milestones set been met as scheduled? What is causing a delay? What can be done to get back on programme? Who needs to do it? Do we need to revise the plan for the next phase?	Quantitative Quantitative	Membership of Steering group agreed and meeting held Project has met the interim milestones set OR recovery plan has been written, where there is slippage against the targets
At end of each retreat	Achievement against aims/ objectives for the retreat	Do we have stakeholder involvement?	Qualitative – questionnaires and interviews	Positive comments from participants;

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	Engagement of stakeholders/participants Agreed plan for action before next retreat	What have we learned? Was the event well-organised and well-managed?	with stakeholders and participants to identify if aims and objects met. Quantitative – recording of attendees, activities and actions	Retreat aim and objectives met Plan agreed for future actions
Project interim evaluation report	Achievement against aims and objectives Stakeholder engagement Outcomes and impacts Benefits Learning Effectiveness of the project	Have the objectives been met, so far? Have the outcomes been achieved, so far? What are the key findings, to date? What impact is the project having? What benefits are there for the stakeholders? Is the approach being used effective? What lessons have been learnt, to date? Do we need to change our future plans?	JISC Progress report by project manager Written evaluation report by external evaluator Feedback from stakeholders and project participants – questionnaires and focus groups	Report completed and submitted Objectives set have been met Positive feedback from stakeholders and participants Revised plan written (if needed)
Project final evaluation report	Achievement against aims and objectives Stakeholder engagement Outcomes and impacts Benefits Learning Effectiveness of the project	Have the objectives been met? Have the outcomes been achieved? What are the key findings? What impact did the project have? What benefits are there for the stakeholders? Was the approach used effective? What lessons have been learnt? What would we do differently?	JISC final report and completion reports Feedback from stakeholders and project participants – questionnaires and focus groups	Report completed and submitted Successful pilots completed Positive feedback from stakeholders and participants Outputs published and disseminated Processes available for adoption by the university

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17. Quality Plan

Output	A process for addressing the specific needs of SME based learners				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
December 2009	Fitness for purpose	Controlled test with pilot users	Evaluation by user groups and external evaluator	Project Manager + team	n/a
	Usability				
	Accessibility				
Output	A process for enabling academic teachers to develop responsive, context sensitive, bespoke e-portfolio based curricula				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
April 2010	Fitness for purpose	Controlled test with pilot users	Evaluation by user groups and external evaluator	Project Manager + team	n/a
	Usability				
	Accessibility				
Output	A process for the negotiation of e-portfolio based learning experiences				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
April 2010	Fitness for purpose	Controlled test with pilot users	Evaluation by user groups and external evaluator	Project Manager + team	n/a
	Usability				
	Accessibility				
Output	A process for the speedy passage from learner and workplace performance needs' analysis to deliverable, quality assured curricula				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
June 2010	Fitness for purpose	Controlled test with pilot users	Evaluation by user groups and external evaluator	Project Manager + team	n/a
	Usability				
	Accessibility				
Output	A process for generating a range of work based learning undergraduate modules within a flexible accreditation framework				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
October 2010	Fitness for purpose	Controlled test with pilot users	Evaluation by user groups and external evaluator	Project Manager + team	n/a
	Usability				
	Accessibility				
Output	A project website				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
June	Fit for	Complies with	External	Project Manager	n/a

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2009	purpose	JISC and University of Wolverhampton guidelines	evaluator	and website developer	
Output	Establishment of a Special Interest Group				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
February 2010	Fit for purpose	Complies with HE Academy requirements for SIGs	Approval of HE Academy	Project Manager + team	n/a

18. Dissemination Plan

The project activities, outcomes and outputs, successes and failures will be disseminated through a variety of means including: project website (to include an RSS Feed and a blog maintained by the project manager), publication of case studies (through website and HEA Subject Centres), development of a special interest group (with support of the HE Academy), presentations of work in progress in peer-reviewed journals, at relevant conferences (UVAC, WBL futures, telling stories) and at the end of project conference hosted by the University of Wolverhampton.

Timing	Dissemination Activity	Audience	Purpose	Key Message
Throughout project	Maintain website and make regular entries on project blog	Academic community; work based learners	Awareness Inform Engage Promote	
Nov 2009	Project aims and objectives, success to date	UVAC conference	Raise awareness with academic practitioners in WBL; generate interest in SIG	
Feb 2010	SIG set up and meeting held	Practitioners in WBL – experts and novices	Promote research and findings to date; others share their experiences; peer reviews	
April 2010	Project activities, outcomes and outputs to date	WBL Futures conference	Inform and raise awareness with academic practitioners in WBL; generate interest in SIG	
Aug 2010	SIG meeting 2	Practitioners in WBL – experts and novices	Promote research and findings to date; others share their experiences; peer reviews	
Nov 2010	SIG meeting 3	Practitioners in	Promote research	

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		WBL – experts and novices	and findings to date; others share their experiences; peer reviews	
Dec 2010	Conference presentation – project overview	Conference – University of Wolverhampton host	Inform and raise awareness with academic practitioners in WBL; generate interest in SIG	
Spring 2011	Final project review	Journal article	Inform	

19. Exit and Sustainability Plans

Project Outputs	Action for Take-up & Embedding	Action for Exit
Processes developed (5)	Published via the project website together with exemplars and case study materials. Consultancy offered on adaptation and implementation in other institutions, use of SIG to identify potential users Staff development offered within own institution for others to use these tools	
Project website	Host site for processes developed, case study materials, exemplars etc. Maintain as part of university's commitment to growing work-based learning as an important funding stream	
Special Interest Group	Seek support from HE Academy to host this group beyond the lifespan of the project.	

<List any project outputs that may have potential to live on after the project ends, why, how they might be taken forward, and any issues involved in making them sustainable in the long term.>

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address
Processes developed	Will be used by the university and have potential for use elsewhere		
Project website	Will house the documentation needed		Who will maintain the site and keep information up-to-date?
Special interest Group	None currently exists, is an area that will continue to grow in the HE sector		Who will lead the group? How will it be funded?

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Appendices

Appendix A. Project Budget

Appendix B. Workpackages



JISC WORK PACKAGE

WORKPACKAGES	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
		Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
	Phase	1	1	2	2	2	2	2	3	3	3	3	3	3	4	4	4	4	5	5	5	5			
1. Project Management																									
2. Baseline review																									
3. Special interest group (SIG)																									
4. Retreat 1																									
5. Retreat 2																									
6. Retreat 3																									
7. Documentation																									
8. Quality assurance																									
9. Reporting																									
10. Dissemination																									
11. Evaluation																									

Project start date: [April 2009](#)

Project completion date: [March 2011](#)

Duration: [24 months](#)

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
				Milestone	Responsibility
WORKPACKAGE 1: Project Management <u>Objective:</u> to effectively organise and manage the project to bring it to a successful completion					
1. Prepare project plan and get sign off from team and JISC	1 st April 2009	25 th May 2009	Project plan submitted to JISC (5th May)	*	AEF
			Project work packages written and submitted to JISC	*	AEF
2. Put in place project management structures and set schedule of meetings (Steering group and Project team)	1 st April 2009	30 th June 2009	Membership of structures agreed and notified to JISC; Provisional dates set		AEF / JISC
			Identify and place consultancy contract with evaluator; Contract agreed and signed		AEF / DJ
			Key JISC reporting dates and events in project team diaries		AEF
			Lines of reporting established and notified to all parties		AEF / SG
			Work streams identified and agreed		
			Cost centre set up		
3. Maintain overview of project and manage events, evaluation, reporting and dissemination to JISC requirements	1 st April 2009	31 st March 2011	Completion of reports to JISC deadlines	*	AEF

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
WORKPACKAGE 2: Baseline Review <u>Objective:</u> Provide a 'snap shot' of current knowledge and practice in relation to the work proposed for the project					
4. identity current practice within and outside the university into the use of e-portfolios with work-based learners for workforce development	1 st May 2009	15 th June 2009	Data collected; potential mentors for project identified		AEF / PB / ML / EP
5. identify current practice in use of e-portfolio with other groups that might inform this project	1 st May 2009	15 th June 2009	Data collected; potential mentors for project identified		AEF / PB / ML / EP
6. Prepare report and submit to JISC	1 st June 2009	30 th June 2009	Baseline report submitted to JISC and published on website	*	AEF
WORKPACKAGE 3: Special Interest Group (SIG) <u>Objective:</u> Set up and host a SIG on e-portfolio based SME pedagogy to share and disseminate practices and experiences					
7. SIG formation activities: publication, communication, liaison with HEA, venue, agenda, dates set	1 st October 2009	30 th April 2010	SIG established	*	AEF / GC/ CH
8. Host SIG meetings	1 st Feb 2010	31 st Dec 2010	3 SIG meetings held during project period		AEF / CH

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
WORKPACKAGE 4: Retreat 1 <u>Objective:</u> To generate pilot questions to prompt dialogue and processes of negotiation and recording to support needs analysis in SMEs					
9. Identification of intended learning for the retreat	18 th May 2009	15 th Jul 2009	Plans for the learning for the two days agreed		Project team
10. Identify and invite participants	1 st June 2009	15 th Jul 2009	Participants invited		Project team / BA
11. Organise event and book accommodation	18 th May 2009	15 th Jul 2009	Arrangements confirmed		BA
12. Event run	1 st Aug 2009	31 st Oct 2009	Pilot questions identified Development needs for academic teachers identified QA processes and issues discussed Ethical framework considered	*	All
13. Identify and run work streams for materials development (post retreat)	8 th Aug 2009	30 th Nov 2009	Work-streams identified and agreed for: i. Development and training materials (learning consultants and academic teachers) ii. QA processes iii. Curriculum design based on e-portfolio iv. Work-based inquiry v. Accrediting informal learning vi. Ethical framework for e-portfolio WBL pedagogy		AEF
14. Documentation written (post retreat)	8 th Aug	30 th Nov	Draft procedures for learning consultants,	*	AEF

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
	2009	2009	academics and QA processes written		
15. Evaluation of event (post retreat)	1 st Aug 2009	31 st Dec 2009	Report available		AEF / DJ
WORKPACKAGE 5:					
Retreat 2					
<u>Objective:</u>					
To evaluate and explore results of trialling processes and work stream outcomes; dialogue and review with pilot groups					
16. Identification of intended learning for the retreat	30 th Aug 2009	31 st Mar 2010	Plans for the learning for the two days agreed		Project team
17. Identify and invite participants	1 st Oct 2009	28 th Feb 2010	Participants invited		Project team / BA
18. Organise event and book accommodation	1 st Oct 2009	28 th Feb 2010	Arrangements confirmed		BA
19. Event run	1 st Jan 2010	30 th Mar 2010	Pilots reviewed and discussed Changes and amendments identified Models discussed and agreed Activities for phase 4 agreed	*	All
20. Confirm deliverables for next phase	31 st Mar 2010	30 th Apr 2010	Work streams agreed		AEF
21. Documentation written	1 st Feb 2010	31 st May 2010	Draft best practice guide written Confirmed deliverables published on website	*	AEF
22. Evaluation of event (post retreat)	31 st Jan 2010	30 th Apr 2010	Report available		AEF / DJ

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
WORKPACKAGE 6:					
Retreat 3					
<u>Objective:</u> Evaluation of activities and guidance issued; agreement of future dissemination and developments					
23. Identification of intended learning for the retreat	1 st April 2010	30 th Jun 2010	Plans for the learning for the two days agreed		Project team
24. Identify and invite participants	1 st April 2010	30 th June 2010	Participants invited		Project team / BA
25. Organise event and book accommodation	1 st May 2010	15 th Jul 2010	Arrangements confirmed		BA
26. Event run	1 st June 2010	31 st Aug 2010	Evaluations and feedback recorded	*	All
27. Discuss continuation strategy	1 st June 2010	31 st Aug 2010	Draft continuation strategy agreed		AEF
28. Documentation written (post retreat)	10 th June 2010	10 th Sept 2010	Best practice guide finalised Confirmed deliverables published on website	*	AEF
29. Evaluation of event	1 st July 2010	30 th Sept 2010	Report available		AEF / DJ

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
WORKPACKAGE 7: Documentation <u>Objective:</u> To maintain a record and overview of documentation required, drafted and finalised for achievement of project outcomes and for reporting internally and to JISC					
30. Identify host and set up website for documentation; agree document management strategy (possibly SharePoint)	1 st June 2009	31 st Oct 2010	Host site set up Documentation added and amended (ongoing)		AEF / Project team
31. Write protocol for testing and approval of documentation and subsequent transfer to live project website	1 st June 2009	30 th June 2009	Protocol agreed and published		AEF / QASD
32. Identify documentation and reports required throughout project and deadlines for submission; add dates to project team diaries	1 st June 2009	30 th June 2009	List of dates identified and in team's diaries		AEF
33. Progress report and budget for JISC: Two reports per annum	TBC	TBC	Schedule of dates agreed with Programme Manager		AEF / SG
34. Final report and budget for JISC	1 st Jan 2011	28 th Feb 2011	Report submitted	*	AEF / SG
35. Completion report for JISC	1 st Feb 2011	31 st Mar 2011	Report submitted	*	AEF / SG

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
WORKPACKAGE 8: Quality assurance <u>Objective:</u> To ensure the quality and “fitness for purpose” of processes and documentation developed during the project					
36. Identify and invite member of staff from QASD to join project team	1 st May 2009	15 th May 2009	Named person invited		AEF
37. overview and input to activities, process developments, reporting and evaluations	18 th May 2009	31 st Dec 2010	Processes and documentation etc approved for QA		QASD / AEF
WORKPACKAGE 9: Reporting <u>Objective:</u> To ensure that all reports are written and agreed by the project management teams and that they are submitted to JISC within the deadlines agreed					
38. identify reporting requirements and put dates in project teams diaries	1 st May 2009	30 th June 2009	Dates identified / agreed and diaries updated		AEF
39. contribute to data gathering, activities, recording and report writing	1 st June 2009	31 st Dec 2010	Information provided as required to report writers requirements		All
40. report writing (see also workpackage 7 - documentation)	1 st June 2009	31 st March 2011	Reports submitted to JISC to deadlines set	*	AEF

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
WORKPACKAGE 10:					
Dissemination					
<u>Objective:</u>					
For outcomes of the project and its processes to be available internally and externally					
41. Identify possible journals, conferences and other opportunities for dissemination	1 st June 2009	31 st March 2011	Potential outlets for publication identified		All
42. Design, publish and maintain website hosted on University of Wolverhampton website for the project	1 st June 2009	31 st March 2011	Website to be live by 30th June 2009 Regular updates made	*	AEF / EM
43. Set up 'blog' for recording project developments and agree protocol for authoring access	1 st June 2009	31 st March 2011	Protocol agreed by 31 st May 2009 Blog to be live by 30 th June 2009		AEF / SG
44. Set up and run SIG			(see workpackage 3)	*	AEF / CH
45. Host free conference for sector to disseminate project activities, outcomes and deliverables	1 st July 2010	31 st Dec 2010	Conference delivered	*	AEF / CH / PB
WORKPACKAGE 11:					
Evaluation					
<u>Objective:</u>					
To ensure all aspects of the project are fully evaluated and that lessons learned are fed back to JISC, project participants and other interested parties					
46. Identify and contract external evaluator	1 st April 2009	31 st May 2009	(see workpackage 1)		AEF
47. Design evaluation methodologies and data collection approach	1 st June 2009	31 st July 2009	Methodologies agreed and notified to team and JISC		AEF / DJ / GC

Project Acronym: ePPSME
 Version:1
 Contact: Alison Felce
 Date:4th May 2009

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
48. Evaluations of: retreats (3); processes developed; SIG; conference; website and blog	1 st July 2009	31 st Jan 2011	Evaluation reports published		DJ / AEF

Members of Project Team:

*AEF =Alison Felce
 CJ=Chris Hockings
 DJ= Dave Johnson
 GC= Glynis Cousin
 EP=Emma Purnell
 KW=Kim White
 ML=Megan Lawton
 PB=Paul Brett
 QASD=Quality and Academic Standards
 SG=Sally Glen (PVC)*

Additional support staff:

*BA=Becci Archer (admin)
 EM=Elora Marston (web developer)*

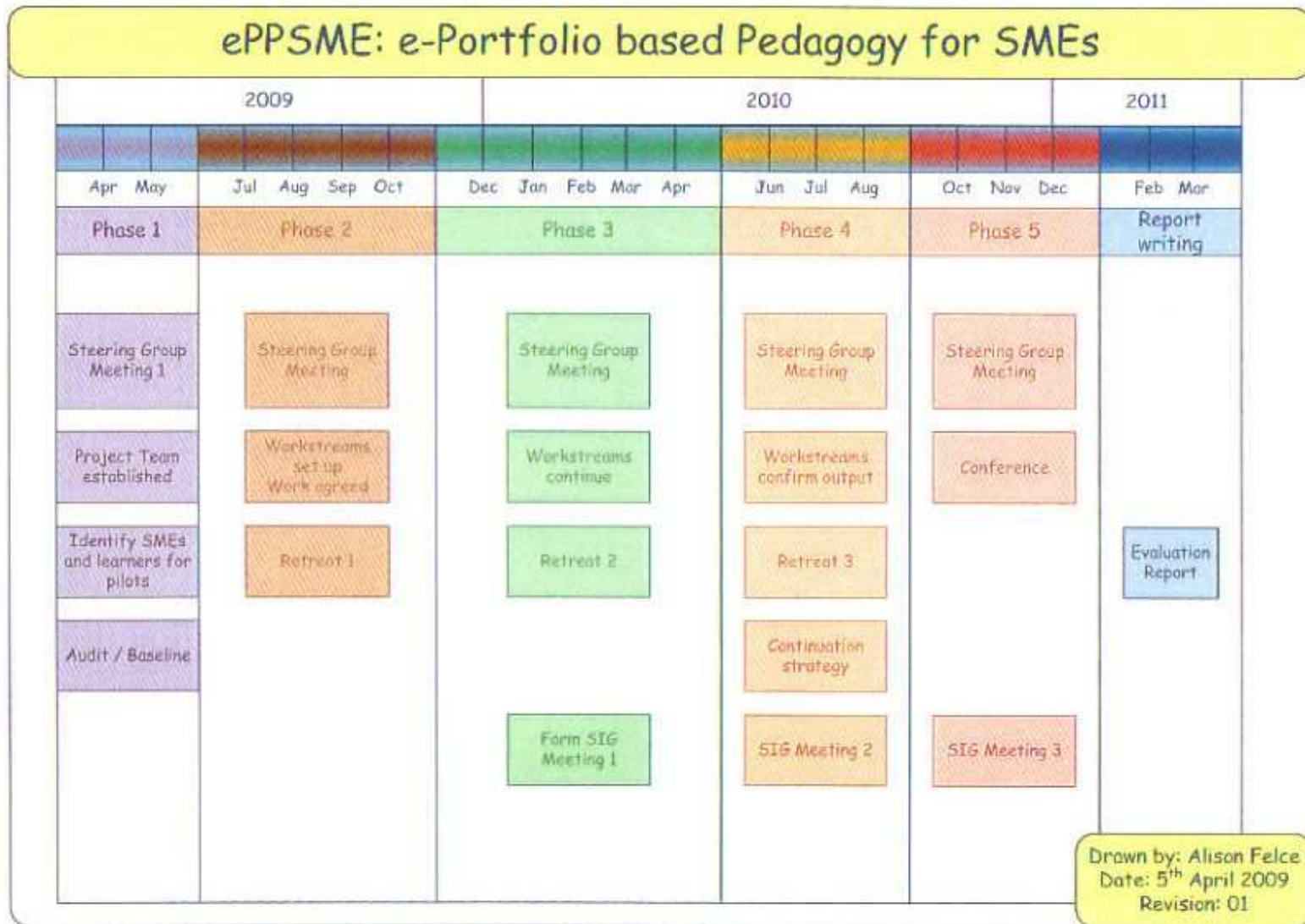


Figure 1. Timeline for project showing sequence of workpackages and phasing

1 Mid-unit evaluation

Four open questions were asked of the learners at week 5 on each unit. The on-line questionnaire was left open for 3 weeks.

1. What have you learnt on this unit?
2. What could have been done differently?
3. What do you want to know more about?
4. Any other comments?

2 End of unit evaluation

A combination of open and closed questions was asked in week 10 on each unit (the final week). The on-line questionnaire was left open for 3 weeks.

1. Did you receive your joining instructions at least 3 days before starting the unit?
 1. Yes
 2. No
 3. Don't know
2. How useful did you find the instructions on how to use PebblePad?
 - 1 Very useful
 - 2 Quite useful
 - 3 Not much use
 - 4 Not useful
3. How useful did you find the personal blog?
 - 1 Very useful
 - 2 Quite useful
 - 3 Not much use
 - 4 Not useful
4. How useful did you find the shared blog?
 - 1 Very useful
 - 2 Quite useful
 - 3 Not much use
 - 4 Not useful
5. Thinking about the number of activities
 - 1 There were too many
 - 2 They were about right
 - 3 There were too few
6. Thinking about the time spent on each activity. (Your answer to this question will help us ensure that we do not give too much, or too little, in each weekly topic).
 - 1 I spent a lot more time than the guideline
 - 2 I spent about the same time as the guideline
 - 3 I spent a lot less time than the guideline
7. The best thing about the unit was:

(open question)

8. The most challenging thing about the unit was:
(open question)
9. I would like to know more about:
(open question)
10. I am able to contact the tutor when I need to:
 - 1 Always
 - 2 Sometimes
 - 3 Seldom
 - 4 Never
11. I prefer to be able to contact the tutor:
 - 1 by email
 - 2 by phone
 - 3 by Skype
 - 4 face-to-face
 - 5 other
 - 6 no preference
12. The unit is challenging and intellectually stimulating.
 - 1 Always
 - 2 Sometimes
 - 3 Seldom
 - 4 Never
13. I found the format:
 - 1 Clear
 - 2 Varied
 - 3 Confusing
 - 4 Difficult
14. I would consider studying another unit like this:
 - 1 straight away
 - 2 within 1 - 3 months
 - 3 within 4 - 6 months
 - 4 within 7 12 months
 - 5 over 12 months
 - 6 never
15. Any other comments:
(open question)



Developing an e-Portfolio-based Pedagogy for SMEs

Evaluation of Pilot units: Questions

F2F, via e-mail or telephone interviews

Learners from pilot 5 credit units

Interview prompts/questions pilot cohorts
 Telephone interview participants will be sent a web link of the original unit Web-folio template to look over prior to the interview to refresh their memory.
 Interview is broken into sections: icebreaker / introduction; prestart (before week 1); getting started (getting IT account and accessing Pebble); completing activities (learning on units); overall (summary points).
 Questions presented in order of importance WITHIN sections. Not all questions in all sections need to be asked but always ask at least those in **blue**. **Green** questions are low priority. **Red** is MUST ask.
Anticipated time for interview 15 - 20 minutes.

Ice-breaker / introduction
 One of the things we want to try to see if there are any typical characteristics in the people who are doing this course. To do this we'd like to know a few details about you, your qualifications and your commitments and responsibilities. So would you mind telling me a bit about yourself, for instance:

- where did you go to school,
- how old were you when you left,
- did you have any formal qualifications (e.g. O-levels, A levels, GCSEs etc)
- what are your responsibilities at home and at work
- what sort of training and qualifications have you had since leaving school / college / university?

Pre-start

1. What were your reasons for taking part in the unit?
2. How did you plan to fit the required 5 hours a week study in?
3. What kinds of technology did you use before starting the unit? To what extent did you use these?
4. What did you know about the unit before it began? What were you expecting?
5. Did you have any study time during work hours?

Getting started

1. Give (up to) 3 words that would describe your initial experience of getting started with the technology and beginning the unit?
2. Could there have been any additional help, guidance or support provided that would have made getting started on the unit easier?
3. Did you experience any difficulties in registering for an IT account?
4. Did you experience any difficulties in downloading the course materials in PebblePad?

Completing the weekly activities

1. What was your experience of using the unit Webfolio in PebblePad?
2. On a scale of 1-6, 1 being easy and 6 very difficult, how challenging were the weekly activities?
3. To what extent were the tasks relevant/applicable to your work-place?
4. How many hours overall do you think you spent working on the unit?
5. Did you receive feedback on your tasks in a timely manner?
6. There were a series of video help sheets and downloadable word version help sheets, which were most useful?
7. Was there enough course material provided to enable you to complete the tasks?
8. How much communication did you have with tutors? On a scale of 1-6, 1 being none or very little contact to 6 being regularly weekly contact
9. What are your feelings about the group blog aspect of the unit?
10. Wk 1 and 2 consisted of PebblePad specific activities, on a scale of 1-6, 1 being the most relevant and useful, what rating would you give the first 2 introductory PebblePad weeks?
11. How useful and relevant were the links to YouTube and other electronic resources?
12. How was the experience of working on screen? Did you print anything?

Overall: learners who DID completed the unit

1. Give (up to) 3 words that would describe your overall experience on the unit?
2. Was the ten week duration of the unit appropriate?
3. What motivated you to complete the unit?
4. Would you study another unit?
5. Normally a unit would cost £125. Do you think this would be good value for money? Why?

Overall: learners who DID NOT complete the unit

1. Give (up to) 3 words that would describe your overall experience on the unit?
2. Was the ten week duration of the unit appropriate?
3. What were the main reasons for you not completing the unit?
4. At what point in the unit did you decide not to continue? Could anything have been done to help you complete?
5. If the unit had been paid for by yourself or workplace, would this have made a difference?
6. Would you consider undertaking the unit again? If so, what would need to be different to make completion easier?
7. Would you study another unit?

Final questions for ALL learners

1. Have you changed anything in your work practice as a result of studying on the unit?
2. Would you be interested in recording a short video where you demonstrate your webfolio for us to use on a website?
3. Is there anything else you would like to tell us about the unit or your experience generally?

Employers:
Interview prompts/questions pilot cohorts
Check the spreadsheet as some employers are also the learners. Where this is the case, suggest you explain to interviewee you would like both perspectives to be covered but ask the learner questions first followed by the employer questions - try not to mix them up.
Anticipated time for interview 10 minutes
<ol style="list-style-type: none"> 1. You agreed for an employee to be part of a pilot unit designed to meet a need identified within your organisation. Did you get what you expected? 2. Did you / would you consider giving your employees time in the working day to complete work on the unit? If yes, why? If no, why not? 3. Normally the units cost £125. Would you be prepared to pay and do you think this would be good value for money? 4. Would you send another employee on this unit or seek an alternative unit for other employees? 5. Can you comment on any benefits you have noticed either in the workplace or to your employee from studying on this unit? 6. Is there anything else you would like to say about the overall experience?

Support departments:
QASD: / LIS: / ITS: i-CD:
Interview prompts/questions pilot cohorts
Anticipated time for interview 15-20 minutes
<ol style="list-style-type: none"> 1. What has been your involvement in the project / process? 2. In what way does this differ from what you would normally do? 3. What positive benefits can you identify from this initiative? 4. Can any of this new practice be transferred to any other parts of the business? 5. If you could start again what would you do differently (to advise others who wanted to run a similar initiative, or make an equivalent change to their practice)?

Tutors and mentors:
Tutors: Mentors:
Interview prompts/questions pilot cohorts
Anticipated time for interview 20 - 30 minutes
<ol style="list-style-type: none"> 1. What has been your involvement in the project / process? 2. In what way does this differ from what you would normally do? 3. How many hours did you spend developing / sourcing learning content for your unit? 4. How many hours did you spend as an on-line tutor each week? 5. What positive benefits can you identify from this initiative? 6. Can any of this new practice be transferred to any other parts of the business? 7. Can you suggest improvements to the pedagogy i.e. would you like to do anything differently? If so, what and why? 8. The design development was based on action research and 3 retreats / workshops. What did you find good about this method and why? What would you do differently and why? 9. If you could start again what would you do differently (to advise others who wanted to run a similar initiative, or make an equivalent change to their practice)? 10. How do you think the practice and processes could best be disseminated within the institution to build capacity and experience in unit development and delivery? 11. What 3 words would you use to describe the best aspects of the project pedagogy?

Introductory paragraph

As part of my doctoral research I am evaluating the key pedagogic principles extrapolated in the JISC ePPSME project using a 'report-and-respond' method¹. I have abstracted the key principles and two more generic comments from the ePPSME Project Final Report submitted to JISC in March 2011 and I have included sections for your response. Please complete the response sections with any comments you think relevant. All comments received will be summarised and anonymised before being reported in my thesis.

Thank you for completing this research enquiry.

1. An eportfolio based pedagogy can be used for work-based learners

The project has shown that an eportfolio based pedagogy can be used to meet the needs of work-based learners and that, appropriately designed, will support the learner in recording and reporting their learning over a period of time. In common with other learners, those in our target group need to be provided with a structure that scaffolds their learning and that enables access to that learning without creating unnecessary barriers or constraints.

[75296](#): I concur with the statement, and with supported on-line tutors agree that personal learning outcomes are reached.

[75306](#): Yes-as long as the scaffolding includes feedback

[75346](#): I would agree with this statement having been the external evaluator on this project. My one concern would be over the robustness of the technology supporting this as technical issues can undermine such pedagogy and seriously frustrate/turn off students. I have experienced this through my work with the OU.

[75420](#): I'd agree with this statement although my experience of the use of eportfolio based pedagogy for work based learners is limited. It is a branch of eportfolio use that I would be interested to learn more about.

[75422](#): Work based learning can be a demanding and challenging area for mature students. Having the work structured and allowing students to work formatively to a specific goal, helps the students develop vital skills, while giving them the support they need. I find that any learning which has support and a strong foundation will increasingly benefit the students. The ePortfolio based pedagogy allows this with the constant support of the students teacher.

[75456](#): My experience is that learners tend to come to higher education from different starting points. Many learners need some sort of support and scaffolding but the degree of scaffolding depends on their previous experiences in education - the degree to which they can learn independently.

Even with work based learners, you may well find some need less support than others.

[75482](#): the flexibility of portfolio fits perfectly this context

[75518](#): I agree with this statement and can confirm through my experience of developing this style for business students that e-portfolio can be used for work-based learners.

¹ Stronach, I. & MacLure, M. (1997) *Educational research undone: the postmodern embrace* (Buckingham, Open University Press).

[75592](#): Agree with the statement. I would add 'evidencing' to 'recording a reporting' their learning, as I think it is a slightly different but important element. Experience shows that in the early days of using eportfolio there are many new skills that have to be developed, getting an IT account, navigating into the system etc and so not being faced with a blank page when it comes to the time to engage in the learning process and not just the admin ones in these early times can provide support and guidance at a time when there is a lot going on.

2. An eportfolio can support assessment through a patchwork text methodology

At the end of each 5-credit unit the learner is asked to provide a short narrative that will show how the learning outcomes covered have been achieved, and if appropriate, applied in the workplace. Where a learner chooses to combine units into a 20-credit module a summative assessment task will be set to draw the learning across the units together, using a patchwork text methodology (Winter, 2003; Scoggins and Winter, 1999).

[75296](#): I agree with this statement, and as part of the team who supported the design, development and delivery of a suite of the 5 credit units, I can confirm that learning pathway across the units is well embedded, and evidenced.

[75306](#): Yes-this approach works for us on termly basis

[75346](#): I agree. I would like to see an example of the type of summative task that would be set in the case of 20 credits.

[75420](#): I have some experience of 'patchwork text methodology' when applied to a contextual module of study and have seen the benefits of its use first-hand.

[75422](#): I feel that the patchwork methodology allows students work in variety of different units, but with the advantage of bringing them together to complete a summative assessment. In my experience this has worked very well with students who use an ePortfolio as part of their assessment. Collecting and creating a variety of different materials, but then 'stitching' them together to make a final piece.

[75456](#): This was the first time I'd heard about the patchwork text methodology. I suspect that, again, as all learners are different, some individuals will like regular but short assignments, whereas others would prefer one longer essay. Overall, my opinion is that the patchwork text methodology could be a sound approach for work based learners who have to fit in their studies with other demands on their time.

[75482](#): the patchwork text method seems ideal for learners who are easing themselves back into education

[75518](#): Again agree and have evidence of this very process through the running of 5 credit units.

[75592](#): Agree. Using patchwork text ensures at a basic level that the final assessment address the learning outcomes of the module as a whole. The learner can see a benefit and a value to completing the previous formative assessments, which in themselves are not credit bearing. Given the multimedia nature of eportfolio a move to Patchwork assessment that could be more than text in nature would be good for the future.

3. Key pedagogic principles for the eportfolio based pedagogy:

Scaffold the eportfolio

The benefits of providing structured learning experiences have long been recognised (for example Wood, Bruner and Ross 1976), particularly when learners are new to study and need guidance in moving from being dependent learners to independent ones. This applies equally to the learners on the units as well as the tutors and e-mentors who are entering a new field of pedagogic design. The primary structure was from a webfolio template which provided a familiar environment, in that it appears as a webpage, through which the learners accessed the unit content and typed their responses to activities set. Each webfolio is made up of five elements: information about the unit, learning content, individual activities, a group blog for group activities and space for 1:1 conversations with the academic tutor. Scaffolding for the academics was provided through sample webfolios and the Tutor Design Guidance Webfolio.

[75296](#): I agree with this statement.

The eportfolio platform, provided the ideal environment for learners to progress from structured learners to independent learners. The availability of both the group and personal blog additionally provided support for learners who occasionally required reassurances from their fellow cohort members.

[75306](#): Yes vital to include tutors and e-mentors as learners too!

[75346](#): I agree with this statement.

[75420](#): I'd agree that scaffolded eportfolios are beneficial and support and aid students learning. Offering the students a 'blank canvas' with no structure can be intimidating and result in students dissociation with the learning outcomes as struggle with coming to terms with using the platform of delivery.

[75422](#): In my experience webfolio's that have clear structure benefit the students to engage with their learning. Prior to this, we would ask students to create a webfolio. This proved to be too vast and challenging for students. It was like asking a designer to make a product, without giving them a product brief. With structured webfolio's, it has meant that student's have a clear understanding of what they need to do, but with enough scope to explore other areas.

[75456](#): The pedagogic principles underlying the eportfolio based approach appear to be based on evidence from research. Providing support materials, content, activities and tutor access all from one location removes one of the major barriers to learning: having to engage with a programme of learning via multiple access points.

I have considerable experience in the staff development of staff in using technology, so I am not at all surprised that academics too required support when entering this new field.

[75482](#): this is a good case of pedagogy and technology working dynamically together

[75518](#): Again agree and again evidence from my own experience.

[75592](#): I'd add something about the gradual increase in complexity and tools/activity types used to provide this scaffolding as the unit progresses. First unit, simplest route into the materials and activities and then diversify activity types afterwards.

4. Key pedagogic principles for the eportfolio based pedagogy:

Include reflection on learning

One of the reasons we proposed the use of an e-portfolio was its potential to enable the development of a reflective approach to learning. We supported the learners in starting to transfer their learning from work into HE and from HE into work by structuring the learning activities to encourage them to reflect on how their work practices related to the unit learning and how one could inform the other. Dialogue with the tutor and the peer group was used to encourage a deeper approach to learning and to start to develop more independent learners. By including opportunities to reflect on learning and to draw on workplace experience we aimed to further support the learning by building their confidence through helping them recognise their existing informal learning and tacit knowledge.

75296: I agree with the statement and echo the statement that "Dialogue with the tutor and the peer group was used to encourage a deeper approach to learning and to start to develop more independent learners. By including opportunities to reflect on learning and to draw on workplace experience we aimed to further support the learning by building their confidence through helping them recognise their existing informal learning and tacit knowledge".

75306: yes

75346: Reflective learning is what differentiates work-based learning from work experience and work placements. There is also a well researched link (Schon) between being a reflective practitioner and an effective practitioner. It would have been disappointing if this was not embedded in the e-portfolio pedagogy.

75420: ePortfolios are ideally suited mediums to allow students to reflect on theoretical, classroom based study and work based practice experience. By their nature they provide flexible access (online and mobile) and can be shared online to allow reflection within peer groups. This would not be possible or as easy with traditional paper based submissions.

75422: Reflection has been of vital importance to my own development, while I was a student and now as a trainer. Mixing this with a dialogue from a tutor and peer group work does improve a students development. It means that they are allowed to share mistakes, achievements and advancements in a supported environment. It plants the message that the students are not alone in their learning.

75456: I come from a background in teaching within further education and community based adult learning. Whilst working in these sectors, I found that reflective practice was not deeply embedded in vocational courses at the lower levels (entry level, levels 1 and 2). Where logs were used, the reflection often did not encourage deeper approaches to learning.

75482: the important thing is to cultivate in students their understanding of reflection

75518: Agree, and can add that the e-portfolio greatly improves the potential for reflective practice.

75592: Crucial to have a dialogic approach to learning when learners are geographically disparate and need to be brought together in a virtual community. Reflection is a difficult process and needs to be supported through dialogue in a safe and supportive environment.

5. Key pedagogic principles for the eportfolio based pedagogy:

Design context sensitive e-support

We needed to make sure that the technology we used, and the way we used it, met the needs of the target learner group. In the first two pilots we provided a telephone helpline and later developed an on-line Learner Support Webfolio. A planned development is the creation of a narrated video giving step-by-step guidance, using screen shots, and which is written for a learner "audience".

[75296](#): I agree with the above statement, and see this further development of accessible technology paramount for learners on introductory units. These early interactions with the technology make all the difference

[75306](#): Yes-we use narrated video using camtasia to scaffold students' and tutors' learning about using the e-portfolio

[75346](#): Really good idea to go for a narrated video. In my experience students want to learn about the chosen topic/subject and not get bogged down/frustrated by the technology. An example would be the Learning Contract Wizard used by the OU which many, many students loathe because of its many technical issues.

[75420](#): Any supporting materials which aids users understanding and adoption of eportfolio systems are valuable. However the very best aid to student learning and understanding of eportfolios is practice. Initial training and supporting instructional media are necessary to support the learner's continued student use of the platform.

[75422](#): Any technology should not deter a user, whether they are a teacher or a student. Support networks, video guidance and even a telephone helpline, help students acknowledge that they are not alone. Having this help and support takes the fear away from using such a sophisticated piece of technology, allowing the students to concentrate on their learning.

[75456](#): I think the idea of producing a narrated video is a good idea. Mainly because the greater the variety of ways that the same learning is delivered, the better. Some students like text, some like to hear messages and others prefer to view video. Presenting content in different ways also aids accessibility reducing barriers for certain disabled learners.

[75482](#): yes, if the technology doesnt go to the learners they will not go to the technology

[75518](#): Agree with this statement.

[75592](#): Important that learners always know there is someone there, even after online support is available. Walk through videos are a great additional support mechanism catering for visual learners and also to provide a more real life experience of tasks.

6. Key pedagogic principles for the eportfolio based pedagogy:

Make it easy to use / intuitive

We anticipated that learners in our target groups would have limited experience of using computers and might lack confidence in their use. The webfolio format provided a familiar environment for the learners as it appeared as a webpage and required the learners to interact with it in similar ways to common webpages. Learners only need to access the software to open their webfolio in 'view' mode and so are not deterred by trying to learn how to use a new and unfamiliar application. As we start to develop other units in a series we are building in a wider range of functions in the PebblePad software to scaffold the learner's use of it to work towards full interaction and the competence, and confidence, to build their own webfolio.

[75296](#): I agree with the above statement and in the early groups some of the learners dropped out of the scheme, stating that they failed to master the IT applications. However those that continued the journey found the interaction with Pabblepad both fulfilling and rewarding.

[75306](#): Yes-we have taken a gradual approach to introducing students to all the functions of the e-portfolio. We start them of my making a simple entry then sharing then later on in the course encouraging students to add their own evidence and add and justify their own competencies from the frameworks.

[75346](#): Seems very sensible.

I think technology can and should be harnessed to support learning. However in my view course designers should bear in mind the following - just because you can it doesn't mean you should.

[75420](#): I use the same approach across a number of differing courses and find it a hugely successful model of adoption. The gentle introduction to the 'front-end' of the eportfolio system builds user confidence before the possible use of more challenging aspects of the system's user interface.

[75422](#): I feel that new initiatives like this must take 'baby steps' and it is very much apparent that this project is using this technique to build a strong foundation for its students. A new course, being back in education and using a new piece of software to complete your studies is a very daunting prospect for new students. Having the webfolio in a simple view mode to complete the work is very effective. It means the students can concentrate on the content rather than then the delivery.

[75456](#): I am not familiar enough with PebblePad to respond to this statement. What exactly will the learners gain in using more of the functions in PebblePad. What will building their own webfolio achieve?

[75482](#): completely agree see last point

[75518](#): This statement fits with my experience.

[75592](#): Experience over time has shown that students not needing to operate in 2 different modes (edit and view) makes the experience easier, both conceptually and logistically. I totally agree that making the webfolio as easily accessible as possible helps with early engagement, especially with the limited time wbl have to devote to study.

7. Key pedagogic principles for the eportfolio based pedagogy:

Use to record formal / informal learning

An e-portfolio tool can be used to record any and all aspects of a learner's experiences; formal and informal, past and current, lifelong and life-wide. As our learners gain in competence and confidence in their use of the software they will be supported, through scaffolded learning opportunities, to populate their asset store (an 'experiences repository') with records of and reflections on their experiences. The learners will be able to build a rich and deep personal learning record that can provide evidence of the achievement of specified or negotiated learning outcomes.

[75296](#): Totally buy in to this statement, and recognise Pabblepad as a life long learning repository that can not only support academic achievements, and enhance a learning journey but can also capture professional and personal development.

[75306](#): Yes but we need to tell our students that these experiences are valid and important. Our students tend to focus purely on the outcomes of high stakes assessments and need directing to see that their learning from other environments is just as valid.

[75346](#): I would support this approach.

[75420](#): I see this as the real challenge. Once learners have finished the module of study that necessitates the use of eportfolios; encouraging students to continue using the system and reflecting on their learning can be difficult. Embedding the use of reflective practice through eportfolio systems across the course of study is key.

[75422](#): I feel that this statement outlines what potential the webfolio offers. It means that the students are supported in their development and the software will enable students to be life long learners, as they can update their 'experience repository'

[75456](#): The value of an eportfolio here is that it's a vehicle for learners to recognise and record the vast range of knowledge and experience they have acquired during their lives, particularly those parts of their lives spent outside formal education. What I'm uncertain about is what happens then? My own experience is that if I take the trouble and time to record and reflect on my experiences and knowledge, it's usually because I have a reason to do so: it forms part of a course, or to help me compile a CV or prepare for a job interview etc

[75482](#): the challenge is to formulate activities that stretch the learner without scaring him/her

[75518](#): Agree and can add that the ability to record all aspects of learning proved to be a very useful tool in terms of development and reflection.

[75592](#): Agree

8. Key pedagogic principles for the eportfolio based pedagogy:

Use to support bite-sized learning

We developed the pedagogy to support short courses (50 notional hours of learner effort) that could be designed to meet identified employer and learner needs. We wanted the courses to be available at a time to suit the learner and to fit in with workplace and other demands. The eportfolio environment has the potential to allow the learner to build their learning over a period of time and to re-enter their personal learning space throughout their lifelong learning journey.

[75296](#): Totally agree with the statement, and the initiative provides this opportunity. The majority of learning takes place at the week-ends or late at night. This clearly supports the above statement. Also with the interaction of transnational learners timezones are not problematic.

[75306](#): yes-chimes with earlier projects we ran, particularly WP

[75346](#): I agree with this statement. How does the learner access this over time, and particularly beyond the life of the last course they have enrolled on? Can they download it and store it themselves independently of the University?

[75420](#): Students that work part or full-time and have the responsibilities of supporting a family need flexible learning models. ePortfolios can facilitate this and allow tfor '24/7' asynchronous engagement with their course material.

[75422](#): The learning becomes flexible for the individual student. Factoring in the other commitments a work environment brings, the students own life style and demands, means it is more appealing for business.

[75456](#): Research tells us that people can't concentrate on one thing for long periods without a break or change in focus, pace etc Bite-sized learning is far more flexible and allows teachers to manage the learning process to maintain concentration or change focus.

[75482](#): bite size chunking is always going to be in tension with higher education aims - this will need addressing very carefully

[75518](#): Agree with this statement as this was my experience.

[75592](#): I think this is a transferable and easily adaptable model to use across contexts. The ability to export episodes of learning supports the stitiching together of bite sized learning.

9. Key pedagogic principles for the eportfolio based pedagogy:

Can be structured into larger awards

The learner can choose to study one five credit unit, or a series of five credit units, and combine these into modules and build modules into awards. The eportfolio provides the flexibility for a learner to record his episodes of learning, both formal and informal, and return back to them and build on them at a time to suit himself. Our pedagogy has proposed a patchwork text methodology to support the learner in building learning within an individual unit towards a summative assessment in 20 credit blocks. At the end of each unit a learner summarises his learning, its application in his work context and any change of practice that has resulted. A learner who completes a 20 credit module will bring forward the learning from the individual units through a final reflective summary.

75296: This statement is fully supported and evidenced through the development of a framework of 20 credit modules leading towards a foundation degree. The summative assessment requires reflection on learning outcomes from all four 5 credit units, and supports the above statement

the pedagogy supports a patchwork text methodology to support the learner in building learning within an individual unit towards a summative assessment in 20 credit blocks. At the end of each unit a learner summarises his learning, its application in his work context and any change of practice that has resulted. A learner who completes a 20 credit module will bring forward the learning from the individual units through a final reflective summary.

75306: Yes if institutions will take this on board as a valid assessment process.

75346: Seems a very helpful and sensible approach.

75420: Flexible modes of study, delivery and assessment are vital to 21st Century education in HE. The opportunity to build towards larger awards by studying smaller manageable units will enable more people to access HE.

75482: this is a question of moving students from bite size to bigger: a challenge!

75518: Again agree but would point out that the incorporation into larger awards has the potential to be tricky due to the inflexibility of the target institution's systems.

75592: Evidence that the model is adaptable and can be used to structure larger awards DL LLB

10. Key pedagogic principles for the eportfolio based pedagogy:

Needs to be transferable and portable

Learners on our units may choose not to continue their studies with the University, they may change employers or link with professional bodies so we needed to ensure that the learning can move with the learner and it needs to be capable of transfer between systems. A learner can export her eportfolio, into a format which can be viewed but not altered, so it is portable; and she can export it into another Leap2A compliant application, making it transferable.

75296: Fully support the statement "Learners on our units may choose not to continue their studies with the University, they may change employers or link with professional bodies so we needed to ensure that the learning can move with the learner and it needs to be capable of transfer between systems". This is evidenced through the interaction with Professional bodies like the Institute of Clerk of Works and Construction Inspectorate (ICWCI) who fully support and endorse the programme.

75306: I would like to see portability but from our experience there are barriers to this-our students all go onto use a postgraduate training eportfolio-will there be enough space on these servers to accommodate 5 years of prior learning? some of our tutors are against this as they view postgraduate training as a new start! There also seems to be a lack of evidence/research from learners asking them what they actually want. Some students state they would like access to their portfolios when they have left the institution but don't necessarily want to take their e-portfolio contents with them. Again this is anecdotal and needs backing with evidence-instead of looking at interoperability shouldn't we be looking at an eportfolio that can be used across all learning episodes and into which the necessary competency structures could be 'plugged' in?

75346: This seems to go back to a point I made in an earlier statement. If the learner having chosen to continue their studies away from the University can only export their e-portfolio in to a format that is read only, how does that fit with notions of lifelong and life wide learning? Could more be done to give the learners something they can take away and grow themselves?

75420: With the commodification of HE continuing at great pace, the customer needs must be considered. There is the potential for students to 'cherry pick' institutional modules, changing to suit educational need. The eportfolio platforms capabilities to export learning materials from HEI to HEI, in support of this, is paramount.

75422: The final product needs to have a variety of different users or can be continued in another institution. This allows the student to choose where, when or how their work can be used in the future. Supporting this with a qualification will allow it to be transferable in other markets.

75456: Being able to transfer the information in an eportfolio is important only if you believe that the eportfolio belongs to the learner and not the institution. I don't disagree that an eportfolio should move with the learner, but I'm uncertain whether learners themselves have shown any real interest in having a 'lifetime' record of their experiences. Is there any research at all which asks learners if they want an eportfolio for life?

75482: my general question would be that something on collaborative learning with peers could be a clearer issue of principle

75518: Can't comment on this one as unfamiliar with Leap2A.

75592: The ability to import and export eportfolio work either into another system or as a

viewable version is key to being able to promote engagement with lifelong learning. eportfolio provides the ideal platform, it is just the connecting together of eportfolio experiences that still has some way to go to make it a seamless process for both learner and supporting institution.

Key to respondents:

ID	Role	Project Team / Participant
75296	Lecturer	Yes
75301	ePortfolio user (Internal)	No
75306	ePortfolio user (External)	No
75346	Academic	Yes
75388	Not known	Not known
75420	ePortfolio user (Internal)	No
75422	ePortfolio user (Internal)	No
75456	Education consultant	No
75482	Academic	Yes
75518	Academic	Yes
75592	ePortfolio user (Internal)	Yes

Developing an e-portfolio based pedagogy for SMEs ~ ePPSME

Baseline report ~ June 2009

Introduction

A base-lining activity was undertaken to review current processes and practice and to collect evidence of their effectiveness, including stakeholder views. In addition, a review of outcomes and lessons of previous projects and initiatives was undertaken and key lessons relevant to the focus of the *Developing an e-portfolio based pedagogy for SMEs* (ePPSME) project noted.

The base-lining activity identified a number of areas relevant to the ePPSME project; an overview of these is given in Figure 1 along with a brief explanation of each identified area. From the research undertaken there are six key areas of activity: Foundation degree, Undergraduate, Postgraduate, CPD activity, External projects, and 'other' activities.

Overview of current processes and practice

ePortfolios

ePortfolios are widely used across the curriculum at the University of Wolverhampton, predominately within traditional taught programmes and to support learners on placement and in clinical or teaching practice. Primary use is for individual modules, parts of modules or small combinations of modules.

The most widespread use of eportfolios is within the Schools of Health and Education who are providing programmes for the NHS and LEAs, respectively. There is no known use with work-based learners in SMEs, the target group for this research. There are difficulties in learners accessing the software used due to firewalls and other security within the employers' organisations and potential issues regarding inclusion of confidential data.

The university is involved in a range of external projects and has built capacity in the use of eportfolios both within and outside the organisation. Academic and support staff in all the schools within the university have experience of using eportfolios and mentors have been identified within each school to support academics and learners on the ePPSME project. There is also a growing community of practice within the university, evidenced through the ePortfolio user group (ePUG) and a group within one of the learning and teaching research clusters.

CPD

The university delivers approx £3 million per annum in a range of 'CPD' opportunities, although this is not evenly distributed across the subject areas. On the whole, this involves the delivery of existing taught modules to specific cohorts, bespoke programmes to meet a particular employer's needs and short courses, or block delivery of existing taught curricula. There is no evidence of provision of negotiated learning, other than for large employers such as the NHS and LEAs.



Stake holder views

Evaluations of stakeholders' views of the university's eportfolio tool, PebblePad, have been undertaken as part of module delivery and/or research projects. On the whole, feedback is positive and the most effective use of the tool is where activities are embedded within the curriculum and 'scaffolded' to support the learners' journeys. Some of the key points raised are noted below:

- Students within cohorts give mixed reviews of its ease of use. Tutor support and guidance is normally needed to build confidence with the software.
- Lecturers express concerns about monitoring the content in both terms of quantity and appropriateness. Often noted is a blurring of social-networking and academic-related activities. Careful monitoring of shared content and clear guidance on amount of content alleviates some of these.
- Students like the way the software allows them to build their 'portfolio' and to reflect and review on their personal development as well as the opportunities to use and reuse their 'content' in different ways for different needs e.g. tailoring CVs for different purposes.

Lessons learned

The baseline audit has identified the following lessons that are relevant to the ePPSME project:

- Firewalls can prevent access to software - this will have implications for work-based learners in ensuring that they can engage both within and outside work.
- Learners often need support to learn how to use the software - effective and cost-efficient solutions need to be developed that will require minimal tutor support.
- Blogs are sometimes used for social networking - learning through social networking can be encouraged through a separate blog that is monitored by a tutor. Different blogs can be provided for different aspects of the curriculum.
- Learners sometimes write large amounts of text - tutors can monitor and specify maximum word counts where necessary.
- Scaffolded activities help learners engage - ensure activities that are included are scaffolded in a relevant way appropriate to the learners and the type and level of study.
- Use of data and other confidential information can be a significant concern - ethical issues must be addressed through appropriate tutor interventions and clear learner guidance.
- There is a range of practice in use of eportfolios within and across the university - this can be used to inform and support the development of the pedagogy for their use with SMEs
- Members of the project team and school mentors have access to external practitioners who may be able to inform the project.





Figure 1 Relevant activity at the University of Wolverhampton



Summary of activity identified in Figure 1

1. Foundation degree

- a. **Travel Operations Management:** collaborative delivery to major UK holiday company operatives through PebblePad. A work-based learning programme.
- b. **Early Years Studies:** in collaboration with a range of FE partner colleges. PebblePad used for induction, content, formative and summative assessment of work-based learners.
- c. **Supporting Inclusive Practice:** co-delivered with EYS programme.
- d. **Business Operations ~ Business Leadership Collaborative cross-universities:** in development. Collaboration between six Midlands-based HEIs to develop programmes in Leadership and Management around themed business areas with common core modules. To be delivered to work-based learners.

2. Undergraduate

- a. **Nursing / midwifery training ~ Mature students / Family friendly routes:** use of PebblePad to support placement learner and development of practice portfolio for summative assessment.
- b. **Project management module ~ PT mature students:** use of PebblePad as a repository for a variety of information used in a summative assignment including video-cast, map, documents and web-links.
- c. **Revision tool for Level 5 module:** portfolio within PebblePad for students to develop alongside weekly practical lessons in science degree.
- d. **Year long placement in NHS lab, Level 5:** successful pilot in 2008/9 will be rolled out to all students in 2009/10. Use as communication tool through weekly blog to maintain contact and monitor student progress. In addition to individual student blogs there will be a students' group blog and a workplace tutors' group blog to serve as discussion fora.
- e. **Student nurses on hospital placements (All levels):** use of PebblePad to keep in touch, offer support and guide clinical practice. Difficulties with large numbers of students and some who write extensive reflections.
- f. **Placement learning Film Studies Level 6:** summative assessment includes a reflective learning diary submitted weekly to students' own blogs. Enables lecturer to identify potential concerns early on and intervene when needed. Can avoid the need for visits to student in placement. Students like electronic 'contact' but do not find the software intuitive.
- g. **Distance Learning in Hong Kong:** PebblePad provides a tool through which feedback and support can be given to work-based students between lecturer visits to deliver taught sessions in HK.
- h. **Computing:** used on a level 4, semester 1, module to support students' transition on their HE programme. The module team provide academic support and counselling to enable students' to develop their portfolios for formative and summative assessment.
- i. **Part time DL Military History:**
- j. **Collaborative Web-folios in Drama:** includes use of collaborative web-folios to enable students to co-write scripts and use of the meeting records tools to support tutees.



3. Post graduate

- a. **Community Matrons:** work-based learners in primary care. Four pilot projects across West Midlands Strategic Health Authority to support development of skills in practice. Will be extended to 250-300 users in W Mids.
- b. **Supporting Hong Kong PhD students:** use of PebblePad to provide tuition, mentoring and feedback (currently under development)
- c. **Skills for Life Cert Ed:** mentoring and support for in-service staff in School of Education and partner colleges
- d. **PGCE PCE in placement:** use of PebblePad during placement (3 years) for mentoring, reflection, portfolio development, tutor support. 2008 cohort will be guided in their applications for Professional Formation / Licence to Practice to teach in FE sector.
- e. **Primary PGCE team Pro-forma skills audit:** ongoing trial and pilot of a skills audit tool developed within PebblePad to support students' evidencing of key competencies.
- f. **PGCE Maths:** use of PebblePad for reflective practice web-folios and to deliver and support a maths enhancement course.
- g. **Primary GTP Work-based route for teaching qualification:** use of PebblePad as a portfolio to support and demonstrate the development of mathematical knowledge; summatively assessed.

4. CPD

- a. **£3 million per annum:** an internal report and audit in 2007 identified that there is approximately £3M pa income from delivery of 'CPD' within the local, national and international community. This is primarily delivered as distance learning, through short course, modules delivered to specific employer-based cohorts, bespoke programmes. Other than provision in the Schools of Health and Education there is very little CPD delivered as work-based learning or through PebblePad.
- b. **CPPD Co ~ iCD:** in 2008 the University of Wolverhampton set up an independent company to act as a brokerage between the university and employers as a major part of its employer engagement strategy.
- c. **Negotiated Learning Framework:** the university has developed a framework for work-based learners that will allow learners to develop and agree their own programme of study that can include APL and employer based training. (Not yet validated)
- d. **FLOW: Flexible Learning Opportunities at Wolverhampton.** This is a process developed for speedier validation of programmes designed to meet employer/employee needs. Primarily intended for programmes of 60 credits or less at a range of levels of study.
- e. **Internal Audit 2007:** this report identified all the CPD activity undertaken across the university and the learners who benefitted from it. It made recommendations to the University Executive on how to progress the future business with employers. Successful completion of the ePPSME project will enable the university to achieve much of what is recommended in this report.

5. External projects: the University of Wolverhampton is involved in the following projects related to e-Portfolio use.

- a. **Cohort III I/NCEPR:** Inter/National Coalition for ePortfolio Research - building capacity and frameworks for scalability in ePortfolio use across institutions and their partners
- b. **Cohort IV I/NCEPR:** research to identify the inhibiting factors in building capability and capacity of staff in supporting the use of ePortfolio.



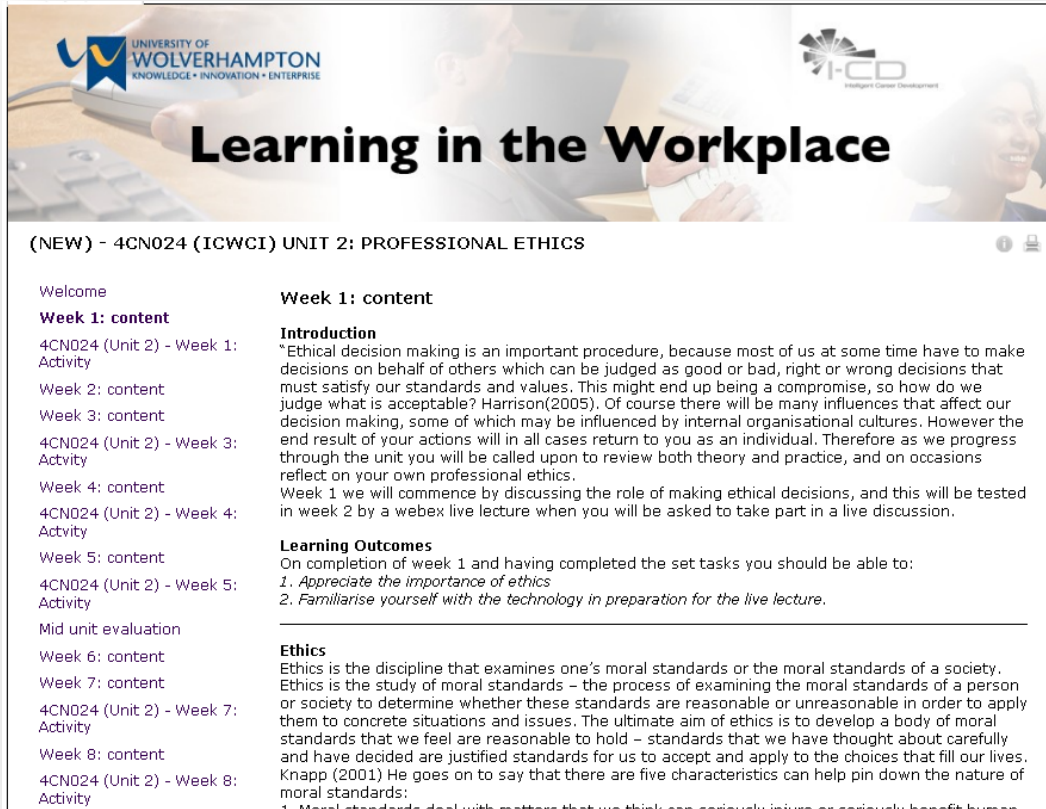
- c. NTFS NARN Project: a coalition of sixteen universities to establish an National Action Research Network on researching and evaluating personal development planning and e-portfolios.
 - d. HE5P: a HEFCE funded project headed by the Centre for Recording Achievement to *develop sectoral policy in e-portfolio practice to support employer engagement and workforce development*.
 - e. TechDIS HEAT: Projects to develop assistive technologies (HE Assistive Technologies Scheme) in (a) multimedia to support mentoring scheme and (b) mobile devices on field visits to places of worship. Both projects use PebblePad.
 - f. HEA Pathfinder: Building capability and capacity in embedding ePortfolio in level 1 curriculum through use of PebblePad. Each of the ten schools in the university identified a core level 1 module through which eportfolios could be embedded. Four of the Pathfinder project module leaders will mentor the academics involved in the ePPSME project pilots.
6. Other
- a. Student 2 Student Mentoring: use of ePDP outside the taught curriculum through use of web-portfolio and blogs to support mentor training and supervision of mentors and mentees. Mentors can support each other through a confidential blog and join on-line debates. It is currently widely used with deaf students and has been piloted in one of the university's ten schools.
 - b. Active Volunteers: PebblePad is used to support learners undertaking volunteering opportunities in the community by providing on-line support, mentoring and access to information.
 - c. ePUG: the ePortfolio User Group is network of experienced and new users to PebblePad to provide a community of practice to share experiences and to find solutions to questions.
 - d. ePortfolio SIG within UoW research cluster: a community of ePortfolio users who are research active. Much of the other work highlighted within this section will have been developed by these researchers.
 - e. West Midlands Technology Network: an analysis of the 'interventions' by the University of Wolverhampton with SMEs to undertake Training Needs Analysis (ESF funded project). An early report identified aspects of a 'delivery structure' relevant to SMEs.

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Screen shots of ICWCI Webfolio for 5-credit unit



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ICWCI
Integral Career Development

Learning in the Workplace

(NEW) - 4CN024 (ICWCI) UNIT 2: PROFESSIONAL ETHICS

Welcome	
Week 1: content	Week 1: content
4CN024 (Unit 2) - Week 1: Activity	Introduction "Ethical decision making is an important procedure, because most of us at some time have to make decisions on behalf of others which can be judged as good or bad, right or wrong decisions that must satisfy our standards and values. This might end up being a compromise, so how do we judge what is acceptable? Harrison(2005). Of course there will be many influences that affect our decision making, some of which may be influenced by internal organisational cultures. However the end result of your actions will in all cases return to you as an individual. Therefore as we progress through the unit you will be called upon to review both theory and practice, and on occasions reflect on your own professional ethics. Week 1 we will commence by discussing the role of making ethical decisions, and this will be tested in week 2 by a webex live lecture when you will be asked to take part in a live discussion.
Week 2: content	
Week 3: content	
4CN024 (Unit 2) - Week 3: Activity	
Week 4: content	
4CN024 (Unit 2) - Week 4: Activity	
Week 5: content	
4CN024 (Unit 2) - Week 5: Activity	Learning Outcomes On completion of week 1 and having completed the set tasks you should be able to: <i>1. Appreciate the importance of ethics</i> <i>2. Familiarise yourself with the technology in preparation for the live lecture.</i>
Mid unit evaluation	
Week 6: content	
Week 7: content	
4CN024 (Unit 2) - Week 7: Activity	Ethics Ethics is the discipline that examines one's moral standards or the moral standards of a society. Ethics is the study of moral standards – the process of examining the moral standards of a person or society to determine whether these standards are reasonable or unreasonable in order to apply them to concrete situations and issues. The ultimate aim of ethics is to develop a body of moral standards that we feel are reasonable to hold – standards that we have thought about carefully and have decided are justified standards for us to accept and apply to the choices that fill our lives. Knapp (2001) He goes on to say that there are five characteristics can help pin down the nature of moral standards: <i>1. Moral standards deal with matters that we think can seriously injure or seriously benefit human</i>
Week 8: content	
4CN024 (Unit 2) - Week 8: Activity	

Week 9: content
4CN024 (Unit 2) - Week 9: Activity

Week 10: content
4CN024 (Unit 2) - Week 10: Activity

Personal blog

Group blog

End of unit evaluation

1. Moral standards deal with matters that we think can seriously injure or seriously benefit human beings.
2. Moral standards are not established or changed by the decisions of particular legislative bodies.
3. We feel that moral standards should be preferred to other values including (especially?) self-interest.
4. Moral standards are based on impartial considerations. – that is, a point of view that does not evaluate standards according to whether they advance the interests of a particular individual or group, but one that goes beyond personal interests to a "universal" standpoint in which everyone's interests are impartially counted as equal.
5. Moral standards are associated with special emotions and a special vocabulary.

Reflection - point
So what examples would you use to explain your personal ethics?
One way of reviewing this may be through discussion with others, or sharing of ideas. So as we begin this third ICWCI accredited unit, I will ask you to engage with a further communication technology/ media – Video-conferencing

Week 1 Activity 1

Research and evaluation

Q1) Link to the official web-ex website here <http://www.webex.com/faqs.html>. Frequently asked questions and familiarise yourself with what is web-ex on-line video conferencing?

Q2) Prepare 3 questions you may wish to ask/debate at next week's live lecture on web-ex .

For example this may relate to your own organisations business ethics, or your own personal ethics or indeed further questions relating to PebblePad.

Word count – variable

Record your responses in your Week 1 activity page, a link to this page can be found [here](#).


Ideas of business ethics
Ethics is the study of morality: those practices and activities that are importantly right and wrong (De George, 1999); business ethics applies general ethical principles to the conduct of business i.e. the question of what is right and wrong. Sternberg (2000) has tried to define business ethics as follows: *"To be an ethical business, an organisation must be a business and must conduct its activities ethically. An organisation is a business if its objective is maximising long-term owner value; a business acts ethically, if its actions are compatible with that aim and with distributive justice and ordinary decency."*

Ethical Theories – a summary file 009


Ethical Theory	Distinctive Characteristics	Example
Duties or principles	Good or bad is evident in the act itself irrespective of the consequences	"Never tell lies"
Consequences	Whether an act is good or bad depends on what happens as a result of the act	Utilitarianism: "Take the action that results in the greatest good for the greatest number"
Virtues	Virtues are good qualities in a person's character that lie between undesirable extremes	"Study and imitate the behaviours of those who are judged to be good"
Teleological	Goodness or badness judged against the purpose of the organisation	"A business should not do things that are not consistent with the business purpose"

Conclusion
Ethics, and business ethics are very subjective, and in the majority of cases, they rely on the actions of an individual. Businesses as part of their culture will always look to encourage good ethical behaviour, and this may be informed by a set of published practices or codes of conduct. For example unless a clear framework is in place as to what is acceptable practice, decisions regarding hospitality may come into question. With the nature of the profession, the Inspector/Clerk of Works will always be under the microscope, therefore in promoting professional integrity it is imperative that published acceptable practices are followed.

 **Tree view**



Pebblepad Collaboration created this on 08 December 2010.
It has been edited by Alison Felce, Emma Purnell.
This was last edited on 09 February 2011.
[Report inappropriate content.](#)



The PebblePad ePortfolio [e](#) system has been developed by [Pebble Learning](#) in collaboration with the [University of Wolverhampton](#). [University of Wolverhampton](#) is responsible for this installation of PebblePad. Assertions made by users of the system are subject to this [disclaimer](#) and this [guide of conduct](#).

Online and Distance learning is a new method and approach for the School of Law, Social Sciences and Communications. It is being harnessed to expand and satiate the home and international markets for Law degrees, taking our staff's expertise into unchartered waters. The ePPSME pedagogy and approach to curriculum design, learning activities and materials creation, pioneered and evaluated by the project which Alison led, provided the basis and the structure for the learner's journey on our new online and distance learning course, which has now launched.

Professor Judith Burnett

Dean

School of Law, Social Sciences and Communications

Email: j.burnett@wlv.ac.uk

Felce, Alison E.

From: Shane Sutherland <shane@pebblelearning.co.uk>
Sent: 11 December 2011 02:54
To: Felce, Alison E.
Cc: Colin Dalziel
Subject: Auto Copy and Auto Publish Features

Dear Alison,

I can confirm that the features you commissioned as part of the ePPSME project, namely the ability to allow an asset to be automatically copied and optionally submitted to a gateway are features that have been integrated into the core toolset of PebblePad.

Although we do not gather any usage statistics we do know from our user groups, and from the activities submitted for the Pebblegogy book, that these features are used and valued by customers both the UK and in Australia.

I can also confirm that these features will be carried forward into the new version of PebblePad, PP+.

Best regards
Shane

Developing an eportfolio based pedagogy for work-based learners

Doctorate in Professional Studies
(Work-based Learning)


Alison Felce M00193795 1

Presentation outline

- My doctoral journey
- Transformations
- Project outcomes and research approach
- An e-portfolio based pedagogy - key aspects
- Conceptual conclusions
- Impact on practice
- Final reflections

Alison Felce M00193795 2

My doctoral journey



Social scientist

Scientist

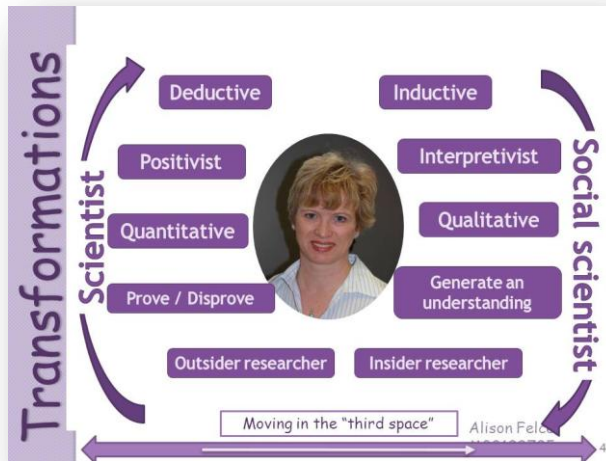
- RAL5
Overseas course design
- RAL4
Postgraduate - MSc
- Mother
- Course management
- Computers & IT
- Lecturer
- Construction Manager
- Undergraduate - BSc

Social scientist

L&T Co-ordinator

Conferences & Publications
- RAL4
PGCert in L&T
- Secondment to ILE
- ePortfolios
- Work-based Learning
- 5-credit model
- Doctoral Study

Alison Felce M00193795 3



Project outcomes

- An employer responsive, e-portfolio based pedagogy for work-based learners in SMEs
- A model to support negotiated programmes based on 5-credit units
- Increased expertise in design and support of work-based learning

Alison Felce M00193795 5

Problem posing / problematising

"Based on our experiences with e-portfolios.....
We surmised that the e-portfolio software could provide an on-line distance learning environment through which tutors could engage with and support learners in the workplace."

(Project p1)

Alison Felce M00193795 6

Research approach

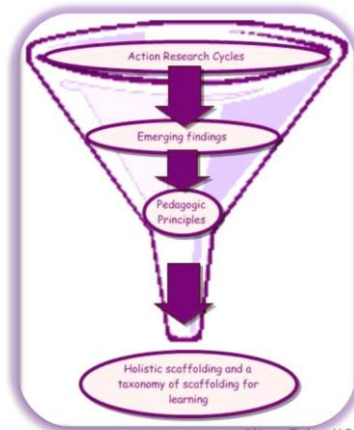
Participatory action research (McNiff & Whitehead, 2002, 2010; Tripp, 2003)

Inductive approach: theory growing out of incidents (Costley, Elliott and Gibbs, 2010)

Report-and-respond enquiry (Stronach and MacLure, 1997)

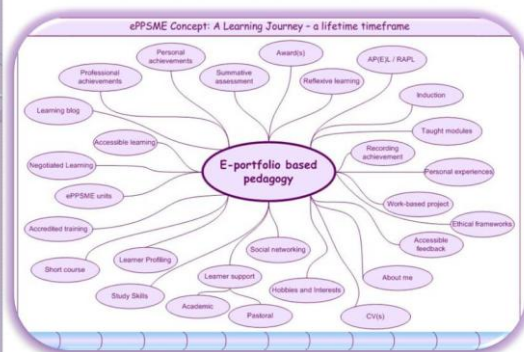
- "Developmental transformation"
- Change interventions
- "A messy patchwork of data sources"
- Thematic analysis of observational data
- Continuous analysis and interpretation
- Validity: Report-and-respond enquiry

Conceptual framework



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An e-portfolio based pedagogy



Alison Felce M00193795 9

Three types of blog

Alison Felce M00193795 10

Learning materials & activities

4#R005 Organisations (Contexts, Designs and Structures): ePortfolio template example

More entries

- Current Posts
- January 2010

Unit guide

Week 1: What is PebblePad (Content)

Week 1: What is PebblePad (activity blog)

Week 2: Blogging and Reflection (Content)

Week 2: Blogging and Reflection (activity blog)

Week 3: Formal & Informal Organisation (Content)

Week 3: Formal & Informal Organisation (Activity Blog)

Mid Point Module Evaluation

Week 10: Summary and Evaluation (Content)

Week 10: Summary & Evaluation (Activity Blog)

End Point Evaluation

Personal blog

Group blog

Week 3: Formal & Informal Organisation (Activity Blog)

Blog for questions sets for week 3

19 January 2010

Week 3, Activity 1

1] In most organisations there are formal elements and informal elements. Before we engage in any reading this week consider what you think are the formal and informal structures to your own organisation?

Time for this task should be no more than 20 minutes.

Post your response here using the edit entry button (please write below the line).

Posted by Lee Crafts at 18:05 0 Comments

View this 'Thought'

Week 3, Activity 2

2] Locate the e-resource (main text) through the university web site as you did in week 1, section 4 (open a separate browser window so you can easily move between pebblepad and the main text). Enter page 77 in the text box next to the 'Go to page' text and hit return. You should now be looking at page 77 'The Formal Organisation'. Read the section below the title but not the section entitled 'The organisation as a coalition'. Pay special attention to Schein's definition and the four bullet points highlighting the aspects of formal organisations.

Are there any similarities and/or differences between the official definitions and the formal elements of your organisation which you outlined in task 1 above?

Time for this task should be no more than 30 minutes.

Alison Felce M00193795 11

Learner support

Alison Felce M00193795 12

University of Wolverhampton
 Learning in the Workplace - Webfolio design and development
 Tutor guidance - ePPSME units webfolio design and development

6 steps to the design and development of 5 credit unit webfolios

6 steps to the design and development of 5 credit unit webfolios

6 steps to the design and development of an ePPSME unit webfolio template

Please ensure that all validation and quality assurance processes are complete or underway before you start to design the learning materials and webfolio templates. Details of these processes can be found [here](#).

Step 1: Download the appropriate unit webfolio template from the ePPSME gateway

The template you will download is made up of a Webfolio that has content pages and a number of embedded blog pages that are used for recording activity responses. These pages contain guidance, hints and tips for customising the webfolio for a particular context. Before starting work on the template please have a look at the [Guidelines for designing webfolio content](#) to give you an holistic view of what needs to be included in the webfolio. When working with the template please be aware that content pages and activity blog pages are edited slightly differently and instructions for both are given below.

There are templates available for units 1-4. There is also an examples gateway where existing

Flexible Learning Opportunities at Wolverhampton
 management of CPD proposals

1. Introduction

The University of Wolverhampton's Strategic Plan 2010-2015 states that the University will develop a lifelong relationship with its staff in response to their continuing professional development needs.

Validation/Approval of ICD units and modules (Process Flowchart)

I-CD undertakes market research within enterprises (SMEs) in the region. The market research is used to inform the Performance Needs Analysis (PNA) at school in terms of subject specialism and to undertake the Learning Needs Analysis (LNA) presented.

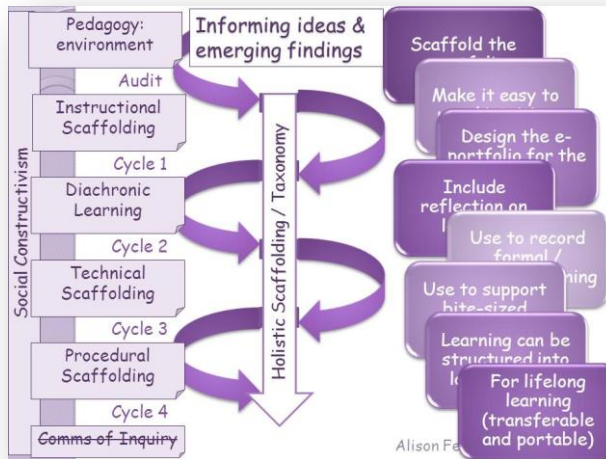
Working in collaboration with all nine academies, higher education delivered via a blended learning approach and physical lectures.

I-CD developments are currently7 focused on the development of a new module. The procedure agreed for I-CD members is that on completion of the fourth unit, and the LNA can be awarded. (ICD diagram)

Structure of units and modules

- Unit 1: 5 credits, 1 or 2 learning outcomes linked to the 20 credit module, Assessment 1
- Unit 2: 5 credits, 1 or 2 learning outcomes linked to the 20 credit module, Assessment 2
- Unit 3: 5 credits, 1 or 2 learning outcomes linked to the 20 credit module, Assessment 3
- Module (contributes to FD): 20 credits, Up to 4 learning outcomes, For UG students - unit assessments 1, 2 and 3 available as formative assessments, All students take final summative assessment

- Key pedagogic principles for an e-Portfolio based pedagogy
- Taxonomy of scaffolding
- Holistic Scaffolding



For information only - not included in slideshow for presentation

Informing ideas

- Pedagogy:** inclusive environment / modifiable by individuals / provides opportunities to learn (Simon, 1981; Croussard et al, 2004)
- Scaffolded learning** (Bruner, various); **technical** (Yelland and Masters, 2007); **procedural** (Rourke & Coleman, 2009) **instructional** (Lipscomb et al, 2004:7); **informal** (Wass et al 2011); **ZPD** (various secondary)
- Diachronic learning** (Currant, 2010); **footsteps in the desert** (Bartlett-Bragg 2003:9)
- Communities of inquiry** (Garrison, et al, 2000, 2011); **Blogs for learning** (various)
- Social constructivism** (Biggs & Moore, 1993; Lave & Wenger, 1991)

For information only - not included in slideshow for presentation

Pedagogic principles

- Scaffold the e-portfolio
- Include reflection on learning
- Design the e-portfolio for the context
- Make it easy to use / intuitive
- Use to record formal / informal learning
- Use to support bite-sized learning
- Learning can be structured into larger awards
- For lifelong learning (transferable and portable)

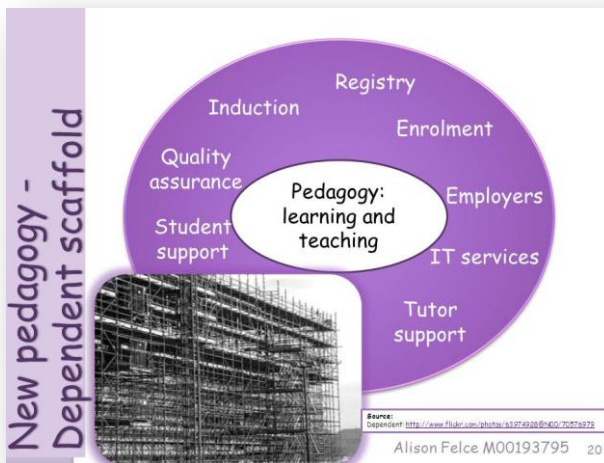
Alison Felce M00193795 18

Taxonomy of scaffolding

Scaffold	Purpose	Learner characteristics
Dependent constructors	Major support framework; provide detailed structure and guidance	New to this
Birdcage	Significant	Things
Platform / mobile	More	are agile than
Ladder	Less	more
Steps	Minimal support; very limited structure and guidance	Information for

Source:
 Dependent <http://www.flickr.com/photos/43274928@N00/70774272>
 Birdcage <http://www.flickr.com/photos/26113012@N00/451727200>
 Mobile <http://www.flickr.com/photos/70872460@N00/330005424>
 Ladder <http://www.flickr.com/photos/2261144@N00/452917102>
 Steps <http://www.flickr.com/photos/3329424@N00/330064334>

Alison Felce



Holistic scaffolding

".....in order to enable the introduction of the new pedagogy and to embed it within the wider University I found that we needed to provide scaffolding throughout the organisation.

This scaffolding is holistic because it embraces all university functions and departments and all personnel within them."

Project pp168-9

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Impact on practice

Pedagogy for WBL

- End of project interviews

Quality assurance processes

- University "FLOW" process

Transferable pedagogy

- Foundation degree / Distance Learning Degree

Adopted by others

- Cardiff Metropolitan University

New software functions

- Auto-Download & Auto-Publish

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Final reflections



Source:
Scaffolding <http://www.flickr.com/photos/36834526@N00/2403363770/>
Capelele <http://www.flickr.com/photos/36834526@N00/2513030466/>
Working elephant <http://www.flickr.com/photos/12209500@N00/1465326/>

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