Fourth Cohort of the Inter/National Coalition for Research into Electronic Portfolios

Designing Eportfolio Based Learning Activities to Promote Learner Autonomy

Final Report to the Coalition

April, 2010

University of Bradford, UK

Project Team:

Neil Currant, University of Salford   n.currant@salford.ac.uk

Jackie Haigh, University of Bradford   j.haigh3@bradford.ac.uk

Carol Higgison, University of Bradford   c.higgison@bradford.ac.uk

Peter Hughes[1], University of Bradford   p.hughes3@bradford.ac.uk

Paul Rodway, University of Chester   p.rodway@chester.ac.uk

Ruth Whitfield, University of Bradford   r.whitfield@bradford.ac.uk

---

[1] Corresponding author.

1 Introduction

This report is a summary of the activity and findings of a small-scale educational research project conducted as the part of the Fourth Cohort of the Inter/National Coalition for Research into Electronic Portfolios. The project was conducted between 2007 and 2010 at the University of Bradford in the UK. It investigates how academic staff are utilising eportfolio tools to support learner development, particularly within specific modules of study. In particular it aims to identify strategies that contribute to the development of learner autonomy.

Modules from a range of subject areas: Psychology, Midwifery, Geography and Combined Studies were included in the study.

2 Research question

Our primary research question was:

- In what contexts and to what effect do tutors deploy eportfolio based learning activities designed to facilitate students' transition toward learner autonomy?

This has been broken down to separate objectives reflecting the different ways in which learner autonomy can be conceptualized and mapped.

- How have tutors utilised the capabilities of the eportfolio system to support learning activities designed to develop student potential as an autonomous learner?

- What contextual features of a learning environment facilitate the implementation of eportfolio learning activities designed to develop student potential as autonomous learner?

- What evidence is there, in student portfolio products, that progress towards autonomous learning is being made?

- What evidence is there from student interviews that students perceive portfolio activities as beneficial for their personal development?

3 Context of the research

The University of Bradford is a pre-1992 Higher Education Institution in the North of England which adopted PebblePad, a commercial 'personal learning system' as its eportfolio entitlement to students in 2007. The primary motivation for this was to support the implementation of the institutional personal development planning (PDP) framework, following the national requirement for all Higher Education Institutions (HEIs) to provide structured and supported opportunities for students to engage in PDP during their course of study. The PDP strategy of the institution was largely characterised by the legitimisation and development of localised practices at the programme, departmental or school level, which has been the dominant strategy adopted in the sector (Ward et al., 2006).

The research draws on the experiences of students and tutors from five undergraduate modules during the academic year 2008-9. Three were first year modules (Psychology, Midwifery, Combined Studies) and two were final year modules (Geography and Environmental Science, Midwifery). The five modules selected had all been making use of e-portfolios for at least two years prior to this research, and therefore the practice was seen as relatively mature.

4 Eportfolios and learner autonomy

4.1 Portfolios and eportfolios

There have been two main drivers for the introduction of portfolios into learning and teaching environments. Firstly, portfolio building is associated with the development of reflective capacity, self-awareness and through that, learner autonomy. Secondly, particularly in professional studies (for example, nursing, teaching), portfolios have been seen as a means for learners to show the links between their professional practice and the professional skills and capacities that they are developing.

Portfolios are seen as a beneficial for learning and development for a number of reasons:

- They promote reflective learning and practice (Joyce (2005); Hartnell-Young and Morriss (1999).)
- They promote personal development planning.
- They help relate theory to practice (Joyce (2005); Challis (1999).)
- They promote self-esteem, confidence and an increase in self-knowledge (Mathers et al. (1999); Hartnell-Young and Morriss (1999).)
- They encourage learner autonomy and self-direction (Joyce (2005); Challis (1999).)

Portfolios are also recognised as a form of assessment and learning that is authentic; based in our real world contexts rather than as some separate learning activity. Hartnell-Young & Morriss (1999) identified three different purposes for portfolios; formative (developmental), summative (assessment) and marketing. Greenberg (2004) takes a slightly different approach by defining the types of e-portfolios by how they are organised; pre-organised *structured portfolios,* evolving organised *learning portfolios* and post-organised *showcase portfolios*.

The introduction of eportfolios has marked a further development in the educational uses of portfolios. The prevailing notion is that e-portfolios are more than just an electronic copy of a portfolio but that they need to be connected and multimedia (Lorenzo and Ittelson, 2005). A static document in digital format simply replicates a paper based portfolio. An e-portfolio takes advantage of modern technology and in particular the internet to allow portfolios to be much more dynamic and flexible.

 In the UK the promotion of e-portfolios has been closely associated with efforts to bring more personalisation to students' learning (Beetham, 2005). In UK Higher Education (HE) the introduction of e-portfolios has largely been conducted in relation to personal development planning (PDP) (Strivens, 2007), although as practice develops wider uses are being found.

As with portfolios, one of the key distinctions that has emerged in the development of e-portfolios relates to whether they are seen as an end-product, a presentational showcase of learning, or whether keeping an e-portfolio is more about the process: an ongoing activity of recording, reflecting on and planning learning as part of study behaviour. In the latter sense we can talk of e-portfolioing as a study and learning activity in its own right. Some learning and teaching contexts might use e-portfolios in both senses.

4.2 Learner autonomy

Learner autonomy is the one of the key goals of Higher Education (Baume, 1992). As an educational concept it embraces, and to a degree synthesises, more specific concepts, like self-efficacy, metacognition, self-regulation and proactive attitude. An autonomous learner is one who is self-governing in their learning; they make choices about what is to be learned and take significant responsibility for that learning. The three main dimensions of autonomy that have been identified in educational settings are personal, rational and relational autonomy (Hughes, 2003).

Personal autonomy relates to the idea of personal responsibility and capacity (Allen, 1992; Bridges, 1997). It includes self-awareness and self-knowledge (reflective capacity), but also personal qualities around self-management (self-efficacy, self-regulation) including action planning and goal setting. As Allen (1992: 48) puts it, it is: "a matter of emotional maturity, self reliance and moral integrity: respectively not being so emotionally dependent on another that one cannot decide anything for oneself; the ability and will to organise oneself and one's life and not to rely on others to provide for oneself; and the ability and will to be resolute and stand by one's convictions."

Rational autonomy relates to the idea of autonomy of ideas, through critical thinking (Allen, 1992; Wringer, 1997; Winch, 1999). People possessed of rational autonomy can critically engage with knowledge, and are free to determine their own beliefs.

Relational autonomy (Mackenzie and Stoljar, 2000) addresses the notion that autonomy in learning does have a social context; there are both barriers and enablers to an individual's ability to exercise autonomy in learning. Autonomy is considered "in interpersonal rather than intrapersonal terms" (Smith, 1997).

Within these broad domains an autonomous learner might be seen to have various characteristics (Table 1).

Dimensions of Autonomy	Characteristics of Autonomous Learners
Personal Autonomy	Reflective, self-aware, self-evaluative, positive self-regard, motivated, responsible, creative, goal-setting, action-planning.
Rational Autonomy	Metacognitive, critical, analytical, formulate own problems, discover and judge the worth of own learning resources, researcher, makes connections in knowledge.
Relational Autonomy	Aware of broader learning context (university, discipline, profession); aware and enabled by of social resources; aware and able to overcome/work with barriers in social context.

Table 1: Characteristics of Autonomous Learners (adapted from Hughes, 2003).

4.3 Developing learner autonomy through eportfolios

As with portfolios, it has been suggested that eportfolios will be beneficial in promoting learner autonomy. For example, Lopez-Fernandez and Rodriguez-Illera (2009) have shown how use of eportfolios can enhance students' self-efficacy and proactive attitudes.

In exploring the relationship between learner autonomy and eportfolios, there are two dimensions to note. Firstly, there is a conception of eportfolios as a free space, an 'autonomous learning zone' (Hughes, 2003), where students can take responsibility for their own learning. As Lopez-Fernandez (2005: 1) puts it: "an assessment virtual space for each student… a private eportfolio as a tool for learning and for developing the assessment, which promotes the learner autonomy. "

Secondly, eportfolios can act as a scaffolded medium through which teachers guide students in the development of their learner autonomy. This is illustrated by Jones (no date: 5) who reports from one initiative where "one of the aims of the ePortfolio was to foster learner autonomy and the participants said this had been achieved *thanks to the tutors' prompting*" (our emphasis). This highlights the idea that the teacher has a significant part to play in the development of learner autonomy, as Knight (1996: 35) puts it: "Independence…is not the absence of guidance, but the outcome of a process of learning that enables learners to work with such guidance as they wish to take…getting there needs considerable insightful planning and action."

Our starting point for this research project then, is that eportfolios have the potential to develop learner autonomy, but that the teacher, as a designer of learning activities in the student's eportolio learning space, is a key agent in this. What sorts of learning activities seem to stimulate learner autonomy, in its different dimensions: personal, rational and relational?

5 Methodology

The study took a pragmatic mixed methods approach (Johnson, 2004), reflecting the diverse academic backgrounds of the researchers, the opportunities available for data collection and the limited resource base of the project. We collected quantitative and qualitative data, and the analytical approach included elements of case-study research and appreciative inquiry. The three main groups of data were: pre and post quantitative questionnaires; student-generated e-portfolios and semi-structured interviews with students and staff. The approach was approved by the ethics committee of the University of Bradford.

5.1 Sample and participants

To pursue the research question we needed to identify a number of modules from different subject areas, and at different academic levels of study. A further consideration was to select cases where the use of eportfolios by tutors was relatively mature, thus guarding against any issues emerging from experimental use. We therefore adopted a purposeful sampling technique, where specific information rich cases are selected for their capacity to shed light on the research question (Patton, 2001). Volunteers were sought from the student cohorts registered for each module. Participants were able to opt into pre and post questionnaires, individual interviews, and sharing their eportfolio for analysis. The actual research population is therefore a self-selected sub-sample of the students studying the modules.

5.2 Pre- and Post-questionnaires

Three validated questionnaires that measure various aspects of learner autonomy were drawn from the educational psychology literature: a perceived self efficacy for learning questionnaire (Zimmerman and Kitsantas, 2005); a proactive attitude questionnaire (Schmitz and Schwarzer, 1999) and appraisal of learner autonomy questionnaire (Ponton et al, 2005). These instruments address mainly issues around personal and rational autonomy, and only to a limited degree relational autonomy. Students were invited to complete these at the beginning and end of the module. This element of the research was intended to be implemented and analysed as a total population across the five modules in the overall study. While it is possible to separate out the different module populations, it was not anticipated that the data from individual modules would be significant given the size of the cohorts. Nevertheless, alongside the other data, this may provide some insight.

5.3 Portfolio Analysis

Electronic portfolios were submitted for assessment purposes in each of the five modules, and it was recognised that that these would form a valuable source of insight into the learning development of the students. Informed by appreciative inquiry (AI) (Shuayb et al., 2009), it was decided to examine the portfolios for indicators of learner autonomy, and to attempt to identify what it was about the design of the eportfolio based learning activities that had elicited these. A small sample of portfolios (five) was selected for each module. A simple coding sheet was developed, and using this, the portfolios were analysed for evidence of the learner's personal, rational or relational autonomy on a scale of absent, slight, moderate and strong. The evidence drawn from included the text of the portfolio, indicators of personalisation of the portfolio, and anything else considered relevant.

5.4 Interviews

A small sample of students from each cohort were interviewed. The interview approach was adapted from the Learner Experience of E-Learning (LEX) project (Creanor et al., 2006), and involved students responding to questions about their approaches to learning, their specific experiences of using the e-portfolio on this particular module, reflections on the usefulness of the support that they had received with the e-portfolio during the course of the module, the key things that they felt they had learned through the process. Interviews were recorded and transcribed. Finally staff who taught on the modules were interviewed about the design and experience of using e-portfolios within their modules.

6. Findings

6.1 Pre- and Post Questionnaires

At the outset it was recognised that because completion of the questionnaires was voluntary, we may struggle to gain a large enough sample to obtain statistically significant results. The purpose of the inventories is to generate mean (aggregated) scores which examine a particular construct (e.g. self-efficacy, proactive attitude). They are not designed to be analysed at the scale of the individual student, nor the individual items of the inventories. By completing the questionnaires before and after engagement with the e-portfolio, it might be possible to demonstrate whether there was any change in self-efficacy, proactive attitude, or learner autonomy of the group.

When analysed as a whole (all students engaged in eportfolio), the mean scores for the scales before and after completing the e-portfolios are quite similar suggesting little improvement in proactive attitude, self-efficacy or autonomy between the start and the end of the modules.

The means all go in the 'right' direction. There are slight increases in Self efficacy for Learning (Zimmerman) scores for both the reading and studying scales. Reading goes from 3.59 (pre) to 3.7 (post) and Studying from 3.5 (pre) to 3.69 (post) but these aren't significant changes.

There is a similar pattern with the Appraisal of Learner Autonomy scale, it goes from 3.2 (pre portfolio) to 3.3 (post portfolio) which isn't a significant change.

The last scale, The Proactive Attitude scale did showed a significant effect, going from 3.22 (preportfolio) to 3.48 (postportfolio) , which was a significant increase ($t = 2.07$, $p < 0.04$, two tailed). This scale therefore demonstrates a significant change, with students apparently becoming more proactive.

The proactive attitude measure doesn't show a difference across years of study (three of the modules are first year, two are final year). There is an increase in proactive attitude on the post test compared to the pre-test and it doesn't depend on the year of study.

There aren't sufficient numbers in some groups to do an analysis by course of study. We did compare the midwives with the other courses combined and there was a hint on an interaction between pre-post proactive scores and groups ($P = 0.099$) but not approaching significance. That reflects a slightly larger increase in proactive attitude in the other groups than the midwives from the pre to post test, but it isn't significant and it is also probably due to the fact that the midwives had slightly higher proactive scores on the pretest to start with (so they had less room to show an increase and the others were catching up a bit).

Due to the nature of the research design (selecting modules where e-portfolios were being used with the whole cohort), there isn't a control group of students who didn't do the portfolio who we can compare with the portfolio group. For this reason it is not possible to definitively attribute the increase in proactive

attitude to completing the portfolio. There is though an increase, which shows an overall small but significant increase in proactive attitude among the students as a whole.

6.2 Portfolios as Indicators of Learner Autonomy

The analysis of the student portfolios was designed to elicit whether there were readily identifiable characteristics of the three dimensions of learner autonomy within the work that the students produced at the end of their module of study. We were therefore trying to identify where the students were being successful in developing and expressing their learner autonomy. By looking at this in relation to the learning activities associated with each module, we hoped to identify what seemed to be successful practices on the part of the tutors.

Example indicators of personal, rational and relational autonomy, drawn from the portfolios, are tabulated and appended (Appendix 1).

6.2.1 Strength of Learner Autonomy

Individual portfolios were assessed in terms of whether they indicated no, slight, moderate or strong learner autonomy, on each of the three dimensions. Although we are dealing with small numbers, and we don't want to fall into the trap of quantifying qualitative data, we found it helpful to aggregate these individual 'scores' at the level of the module, to see if any patterns emerged (Table 2).

	Personal Autonomy				Rational Autonomy				Relational Autonomy			
Module	No	Sl	Mod	Str	No	Sl	Mod	Str	No	Sl	Mod	Str
Combined Studies 1	-	2	3	-	1	3	1	-	-	2	2	1
Midwifery 1	-	2	1	2	-	2	3	-	-	2	2	1
Psychology 1	-	1	3	1	-	2	3	-	-	3	2	-
Geography 3	-	2	1	2	-	-	2	3	2	-	3	-
Midwifery 3	-	-	2	3	-	1	2	2	-	-	1	4

Table 2: Strength of indicators of autonomy within student portfolios (KEY: No =none; Sl = slight; Mod = Moderate; Str = Strong).

Looking at this data for *indicators* of patterns, we can make the following observations:

- Final year students are generally demonstrating stronger learner autonomy than first year students, as would be expected.
- Midwifery students in both first and final year exhibit relatively strong personal autonomy.
- Psychology and Midwifery first years demonstrate stronger rational autonomy than Combined Studies students.
- Combined Studies and Midwifery first years demonstrate slightly stronger relational autonomy than Psychology first years.
- Geography final years demonstrate slightly stronger rational autonomy than Midwifery final years, but Midwifery final years demonstrate stronger relational and personal autonomy.
- Students in modules delivered over a full academic year (Midwifery 1 & 3, Psychology 1) show stronger learner autonomy than those delivered over a 15 week semester.

We now want to briefly discuss each module in turn, alongside some further evidence, to try to elicit what aspects of the design of the module, in particular the eportfolio learning activities, appear most successful in supporting the development of learner autonomy.

6.2.2 Combined Studies Year 1: Communication in an Information Age

This module is aimed at improving the communication and IT skills of students of Combined Studies. This group contains a significant number of mature students as well as some who are having a second attempt at the first year. The module includes a number of e-portfolio based learning activities, including maintaining a weekly learning blog, collaborating with peers in producing a wiki and a final reflective statement. It runs in the second semester of the year.

Aspects which positively supported the development of learner autonomy include:

- Developing an action plan at the start of the module.
- The weekly blog, which was shared with the tutor for formative feedback.
- Engaging in and reflecting on collaborative activity in the form of a wiki.
- Final reflective statement encouraged people to look back through their weekly entries and reflect on development.
- The structure of the portfolio is scaffolded through a template prepared by the tutor, although students have the capacity to personalise the design and presentation.

6.2.3 Midwifery Year 1: Lifelong Learning Module

This module is the beginning of a strand of lifelong learning modules that runs through the Midwifery degree programme. The majority of students are mature, and most of the programme is delivered through problem-based learning. A significant amount of the course is spent on practice placements. It runs through the academic year, across both semesters.

Aspects which positively supported the development of learner autonomy include:

- Students prepare a position statement at the start of the module, as one of the first contributions to their eportfolio. They reflect on their motivations for joining the course and their goals.
- Students are advised on models of reflection (e.g. Gibbs).
- Students engage with literature on study skills.
- Students reflect on collaborative working in their PBL groups.
- Students complete a book review which helps develop their rational autonomy.
- The assessment regime includes elements of self and peer assessment.
- The structure of the eportfolio is clearly scaffolded through a template.
- The eportfolio is a site to reflect on the course as a whole, not just the specific module – it has a synoptic role.
- The students prepare action plans for specific aspects of their study and practice. They are plans for real issues that the students will be addressing during that year.
- Students complete a final reflective statement looking back at the year.
- Tutors provide formative feedback throughout.

6.2.4 Psychology 1: The Psychology of Learning and Study

This is a core module for a Psychology programme of about 100 students. The module has been designed to link the development of students own study and learning skills with the discipline knowledge of the psychology of learning by looking at concepts like metacognition and self-efficacy. It runs through the academic year, across both semesters.

Aspects which positively supported the development of learner autonomy include:

- The process starts with students completing an institution-wide skills self-audit which is embedded in the eportfolio.
- Early on, students complete an action plan relating to their study or career.

- For all reflective activities, students are encouraged to link their personal reflection on study with relevant psychological theories.
- Students prepare a CV midway through the first semester, and then revise it several months later to reflect the development in their self-awareness and skills through the module. They write a reflective commentary at the time of the revision.
- Students collaborate on a group presentation and reflect on the experience.
- Students are asked to reflect on how learning about concepts associated with metacognition have influenced their own learning behaviour.

6.2.5 Geography 3: Global Environment Management

This is an optional final year module of which a final eportfolio constitutes 60% of the assessment. It is conducted over the first semester of the final year. The key learning task is for students to demonstrate their critical engagement with global environmental regimes, alongside their process of learning about them. Students are encouraged, but not required to keep a learning journal through the module.

Aspects which positively supported the development of learner autonomy include:

- Students have free choice of environmental issues they want to investigate, and are encouraged to make connections across a range of issues.
- Specific learning activities which encourage critical engagement with a wide range information sources.
- Students identify their own learning resources.
- Encouragement to develop and express own point of view.

6.2.6 Midwifery 3: Lifelong Learning 3

This is the final element of the Midwifery programme's lifelong learning strand. It follows a similar structure to Lifelong Learning 1, with an opening position statement, specific action planning tasks relating to academic and practice issues. The distinctive feature of this module cohort was that they were the first group in the university to have used the eportfolio for all three years of their degree.

Aspects which positively supported the development of learner autonomy were as listed for Lifelong Learning 1, with the addition of:

- Encouragement to bring evidence-base into discussion of practice issues.
- Action planning for major practice project.
- Reflection on the process of going to interviews to secure employment.

6.3 Emergent Issues from Student Interviews

Alongside the analysis of portfolios, the interviews with students revealed that unleashing the power of eportfolios as a tool to help develop learner autonomy requires a combination of student engagement, authentic activities and tool reliability/flexibility.

6.3.1 Time

Students need to be aware of the values of PDP, lifelong learning and learner autonomy. There is no quick 'fix'. It is a longitudinal process that requires engagement over a period of time to be useful. To support this, formative activity needs to be part of the portfolio building process to encourage longer term engagement rather than a summative exercise done at the end.

For example here is a student who did not use it over time in the first year but realised later that it would be beneficial to engage with it in a longitudinal way:

> "I used PebblePad honestly towards the end of the year before the deadline...I learnt from my mistake...I'm actually using it a lot more this year to begin with."

Often the most powerful learning observed came in the form of a summative reflective statement or review. For many students it was only at this point that they became aware of the learning and changes that had taken place over the course of their module / studies:

> "you don't appreciate (what you've learnt) until you actually look back."

Longer, year-long modules and use of the e-portfolio generally had more impact on learners than 12-week semester modules. It was easier for students on longer modules to see the benefits of using an e-portfolio. For those on shorter modules it was usually through the summative reflective statements at the end of the module where the benefits became apparent, by which time it was maybe too late to make the most of those benefits.

The 'over time' or diachronic element of e-portfolios seems to be important as a concept of which students need to be aware. It may be that this is a threshold concept (Meyer & Land 2003) for e-portfolios; that students understand that learning takes place over time and that recording and then reviewing events is an important process in getting the best out of e-portfolios. Bruner (1991:6) describes narrative diachronicity as "...a mental model whose defining property is its unique pattern of events over time." Is this a concept that helps us understand how we use e-portfolios?

6.3.2 Emotion

Portfolios are often about the first person and therefore need emotional involvement. They are often by their nature personal and therefore that has to be part of the process. Assessment criteria and other messages given to students have to align with this personal and emotional view. Shackleton-Jones and Samarawikrema (2010:1), when talking about learning design and their toolkit, highlight the role of emotion in learning, "at its heart is a theory of learning that suggests that all data is stored according to complex contextual cues which are predominantly emotional in nature – without these emotional 'markers' information merely passes through our system."

Some students who used their portfolio in a limited instrumental way did not see it as a personal tool and were emotionally cold about the product:

> "I didn't keep it as too much of a personal diary...it was academic, I didn't think it was appropriate."

Students who valued the portfolio as part of their learning strategy had a personal and emotional involvement with the content:

> "just reading stuff from February … it stirred up the emotions".

A student who did not really engage because the portfolio task felt like a prescribed, constricting task suggested an alternative approach:

> "Record things personally, it will probably work better...record important events...when you draw back on it, it means something. An action plan about an essay means nothing."

To support this, formative activity needs to be part of the portfolio building process to encourage longer term engagement rather than a summative exercise done at the end.

6.3.3 Balancing Structure and Freedom

One of the key tensions that is revealed through this resource, is the balance between freedom and structure. In the section relating to the portfolio analysis we shown that tutor-designed activities can stimulate the development of various aspects of learner autonomy. However, given the personal nature of portfolios, PDP and lifelong learning it should still be important to encourage freedom in the nature of the portfolio task rather than it being seen as an instrumental 'hoop-jumping' exercise.

7 Implications for practice and future research

Our general recommendations about using eportfolios effectively for learner development, including learner autonomy are:

1. To support engagement over time formative activity needs to be part of the portfolio building process to encourage longer term engagement rather than a summative exercise done at the end.
2. Encourage and be explicit about the processes of PDP, lifelong learning and portfolio building. This form of learning and assessment is not common in the school system and students may not see the value of it.
3. Build in formative tasks. Some students may not understand why they are using an e-portfolio at the start and may not engage. However, learning will be difficult if they have nothing to reflect on later.
4. Encourage personal involvement and ownership of the portfolio. This may be through personalisation options, creative use of the portfolio, emotional engagement and so on.
5. Student behaviour is often driven by assessment. Learning outcomes and assessment criteria need to align with the core values of e-portfolios, PDP & lifelong learning.
6. Include a summative review or reflective statement as part of the portfolio work.
7. Use of the e-portfolio needs to be part of a whole course to really give students a chance to understand the processes and benefits and to develop as lifelong learners.
8. Portfolios are often about the first person and therefore need emotional involvement. They are often by their nature personal and therefore that has to be part of the process. Assessment criteria and other messages given to students have to align with this personal and emotional view

Our specific recommendations for eportfolio based learning activities to promote the development of learner autonomy are:

1. Start the process with an initial reflective statement that shows where learners are when they start the process.
2. Identify activities that address personal, rational and relational aspects of autonomy; don't just focus on one.
3. Some scaffolding will be important, especially in the first year of a degree programme, but to maximise autonomy, students should have the freedom to decide which evidence and reflections are most important to meet the learning outcomes and these should be assessed accordingly.
4. Goal-setting and action-planning activities should relate to things that are directly meaningful to students at that time.
5. Encourage personalisation and creativity in portfolio design, and reward it in assessment criteria.

Overall our conclusion is that eportfolios can become spaces within which learners can develop and express personal, rational and relational autonomy. Maximising this opportunity requires a significant degree of tutor design, deployment and feedback on learning activities. It would be a worthwhile goal for all students

to be able to make their eportfolio an autonomous learning zone by the end of their honours degree, as to do this they will need to have inculcated the habits of lifelong learning. To reach this goal needs a careful balance of structured learning activities and freedom to discover.

What we haven't discovered in this research is whether the 'e' in eportfolio really makes a difference for learning, or for learner autonomy. None of the portfolios that we looked at were really yet fully exploiting new media, and the possibilities of recording and reflecting in different ways. As practice develops within our institution, and within the sector, we expect to see more of this, and at that point it may be possible to discern whether different forms of reflection, or of learning, are enabled.

References

Allen, R.T. (1992) *The Education of Autonomous Man*, Aldershot: Avebury.

Baume, D. (1994) Developing Learner Autonomy, *SEDA Paper 84,* Staff and Educational Development Association: Birmingham UK.

Bruner, J.(1991) The Narrative Construction of Reality, *Critical Inquiry* 18 (1) pp. 1-21.

Challis, M. (1999) Portfolio-based learning and assessment in medical education, *Medical Teacher*, 21 (4) pp.370-386.

Creanor, L.K. et al. (2006) *LEX: The learner experience of e-learning final project report*, [online] http://www.jisc.ac.uk/media/documents/programmes/elearning_pedagogy/lxp%20project%20final%20repo rt%20dec%2006.pdf. Accessed June 13 2008.

Greenberg, G. (2004) The digital convergence: Extending the portfolio model, *Educause Review*, 39 (4) pp.28-37.

Hartnell-Young, E. & Morriss, M. (1999) *Digital Professional Portfolios for Change*, Corwin Press.

Hughes, P. (2003) Autonomous Learning Zones, paper presented at *10th European Conference for Research into Learning and Instruction,* Padova, Italy, August 26-30, 2003.

Johnson, A.J. (2004) Mixed Methods Research: A Research Paradigm Whose Time Has Come, *Educational Researcher*, 33, 7, 14-26.

Jones, M. (no date) *Using ePortfolios to Facilitate Connections Between Academic and Practical Learning in Teaching English for Academic Purposes*. [Online] Report. University of Nottingham. Available at: http://www.nottingham.ac.uk/integrativelearning//images/File/Case_Studies_Volume_1/CS_Martha_Jones. pdf (Accessed 16/04/10)

Joyce, P. (2005) A framework for portfolio development in postgraduate nursing practice, *Journal of Clinical Nursing*, 14 pp.456-463.

Lopez-Fernandez, O. (2006) *A Case Study about the Use of Eportfolios from the University Students Perspective* [online] Available from: http://www.eife-l.org/publications/eportfolio/proceedings2/ep06/ep2006_papers/lopez . Accessed April 16, 2010.

Lopez-Fernanzez, O. and Rodriguez-Illera, J.L. (2009) Investigating university students adaptation to a digital learner course portfolio, *Computers and Education*, 52, 3, 608-616.

Mackenzie, C. and Stoljar, N. (2000) *Relational Autonomy*, New York and Oxford: Oxford University Press.

Mathers, N.J., Challis, M.C., Howe, A.C. & Field, N.J. (1999) Portfolios in Continuing Medical Education – Effective and Efficient? *Medical Education*, 33, pp.521-530.

Meyer J.H.F. & Land R. (2003) Threshold Concepts and Troublesome Knowledge (1) – Linkages to Ways of Thinking and Practising in Rust, C (ed.) *Improving Student Learning – Ten Years On*, Oxford: OCSLD.

Patton, M. (2001) *Qualitative Research & Evaluation Methods*. Thousand Oaks, CA: Sage Publications.

Ponton, M.K. et al. (2005) The relationship between self-efficacy and autonomous learning: the development of new instrumentation, *International Journal of Self-Directed Learning,* 2, 1: 50-61.

Schmitz, G.S. and Schwarzer, R. (1999) Proaktive Einstellung von Lehrern: Konstruktbeschreibung und psychometrische Analysen [Teachers' Proactive Attitude: Construct description and psychometric analyses]. *Zeitschrift für Empirische Pädagogik*, 13 (1), 3-27.

Shackleton-Jones, N. & Samarawikrema, S. (2010) BBC Learning design toolkit, [online] http://www.aconventional.com/2010/03/bbc-learning-design-toolkit.html (accessed 15/04/10)

Shuayb, M., Sharp, C., Judkins, M. and Hetherington, M. (2009) *Using Appreciative Inquiry in educational research: possibilities and limitations.* Report. Slough: NFER.

Smith, R (1997) The education of autonomous citizens, in in Bridges, D. (1997 ed.) *Education, Autonomy and Democratic Citizenship*, London and New York: Routledge. Pp 127-137.

Ward, R., Jackson, N. and Strivens, J. (2006) *Progress files – are we achieving our goals?* Report. Centre for Recording Achievement and The Higher Education Academy.

Winch, C. (1999) Autonomy as an educational aim. In Marples, R. (1999 ed.) *The Aims of Education*, London and New York: Routledge. Pp 74-84.

Wringe, C. (1997) In defence of rational autonomy as an educational goal. In Bridges, D. (1997 ed.) *Education, Autonomy and Democratic Citizenship*, London and New York: Routledge. Pp115-126.

Zimmerman, B.J. and Kitsantas, A. (2005) Students' perceived responsibility and completion of homework: The role of self-regulatory beliefs and processes. *Contemporary Educational Psychology*, 30, 4: 397-417.

Appendix One: Indicators of Learner Autonomy from Student Eportfolios

Key: CS1 = Combined Studies 1; MW1 = Midwifery 1; Psy1 = Psychology 1' Geog 3= Geography 3; MW3 = Midwifery 3

Dimension of Autonomy	Indicator
Personal	"Producing my Action Plan through PebblePAD at the start of the module was useful as it enabled me to reflect on my abilities and career to date as well as focus my thoughts on where I would like to be in a few years time." CS 1
Personal	"If I get a chance again I would do similar course because course empowers you with lots of strengths and makes you motivated." CS1
Personal	"By looking back through my entries made to the blog it is surprisingly easy remember particular sessions from the course and specific events that occurred within them. Interestingly it also brought back some of the feelings that surrounded incidents that happened some weeks ago" CS1
Personal	"Out of all these skills I value my ability to look inwards, reflect and be self aware in all things as the strongest and most useful." MW1
Personal	"... with nobody to look at these action plans and to keep me accountable to them very difficult to stay motivated to keep up with them and to even keep looking at them...Therefore if I was creating an action plan in the future I would produce clear tasks and share the action plan with a peer so that I feel obliged to keep going with them." MW1
Personal	"The value of this action plan is that it is very motivating for me and involves using my time in a productive and effective manner to gain more knowledge in the areas that I hold great interest in." Psy1
Personal	"One of the most important goals for me was to become involved in some sort of voluntary work. It is my ultimate goal to become a clinical psychologist and work in the National Health Service or a Mental Health Trust. Enrolling as a volunteer will certainly improve my c.v when I begin to apply for post graduate study or for prospective jobs." Psy1
Personal	"To make a positive impact we need to be prepared for changes, especially in our general lifestyle." Geog. 3
Personal	"I remain excited by the challenges within the field of water management ... In this light, I wish to gain a position dealing with the legislative aspects of (global) water management ... my 'dream job' would be with the UN Water Centre in Hamilton, Canada, ... This strongly influenced my module choices last summer. I chose Global Environmental Management as at its core is the critical engagement with global management systems, strongly overlapping with my ambitions for my future in regards to water" Geog 3
Personal	"I have decided the use Gibbs' model of reflection as I have found this to be a good method of reflecting upon an experience." MW3
Personal	"If I work hard this year I have a good chance of attaining a 1st class honours degree. Although I understand that high grades do not automatically translate as a good midwife, I would very much like to achieve this classification. I am the only

Dimension of Autonomy	Indicator
	person in my family to ever attend higher education and I have sacrificed a great deal emotionally, physically and financially to be able to study midwifery. If I get to the end of the year feeling that I have not reached my full potential I will be disappointed." MW3
Personal	"I feel I have followed my action plan and achieved my goals. I certainly have been more positive this last year and have not been quite so hard on myself. I have increased my clinical grades which I feel is my strongest area and is the most important to me. I now feel I am using my learning methods to the best of my ability and I am happy with my time management use." MW3
Rational	"Cotterell (2003) says that as a higher education student you are responsible for your own development as a learner. She goes on to suggest keeping a reflective journal and write down each week anything that helps you to assess how a particular area of study is progressing. So whilst it was never referred to as a '*reflective learning journal*' the PebblePad blog I have kept each week has obviously been exactly that." CS1
Rational	"I always think I have done it correctly however once I get the feedback I have used non-academic references such as the pregnancy magazines. I have been told by my tutor to go to the main place of where the magazine have found the information and reference that instead of referencing the magazine i.e. World Health Organsiation." MW1
Rational	"My individual learning from this process [book review] is monumental. I have learnt what my strengths and weaknesses are. I tend to focus too much on description and not enough on analysis, I also need to introduce arguments into my analysis to show debates in such areas. Now I know this I can focus on my weaknesses and strengthen them." MW1
Rational	"In reflection to the goals and steps outlined above, I view them to be quite realistic. This is a self evaluative reaction as outlined by Baumeister (1999) in relation to self efficacy." Psy1
Rational	"I also assessed how I felt about the work I had done in terms of its standard and quality, also taking into account the affect stress on my own cognition while I was completing them. The results of my metacognitive reflection showed that I was capable of doing work at the last minute however, my work would benefit from writing up while reading, allowing for more accurate references and also it would stem cognitive fatigue occurring due to lack of sleep (Hobson 1998, cited by Eysenck, 2000, Activation-Synthesis theory). With this in mind I set about writing my second semester assignments as soon as possible. As thought, a major strength of early writing was more coherent work; due to low mental fatigue." Psy1
Rational	"Before the module I believe I had the view that politicians, scientists and NGO's to name a few different actor groups, always worked together when overcoming GEM issues. I now realise this was a somewhat a naive view and have the ... opinion, that often actor groups have 'entrenched beliefs' and are not necessarily willing to co-operate with one another." Geog 3
Rational	"I have read literature and undertaken research in order to analyse and explain the problems with predicting the extent of change as well the political and social processes involved with constructing effective international and governmental regimes to tackle them. Understanding how these structures and transformations influence and interact with environmental changes is essential towards efforts to respond to them." Geog 3
Rational	"I would like to get in touch with the midwife who wrote the book about optimal

Dimension of Autonomy	Indicator
	fetal positioning and gain her views. I want to be in a situation where I have about forty references to look at in order to build a well-researched practice project." MW3
Rational	"This article really affected me because I could draw too many similarities between the environment described and the birth rooms at this hospital. It renewed my awareness of discreet medicalisation of the rooms and made me think about what I personally could do to provide a better birthing environment with the facilities available." MW3
Rational	"I have gained an understanding of evidenced based research and how this research has an impact on clinical practice. I also feel I am in a position to be able to make an informed decision regarding the use of evidenced based guidelines and research." MW3
Relational	"Going back to learning as a mature student is quite difficult - getting yourself back in to the learning mode is hard, but I'm not alone - the class isn't full of 18 year olds" CS1
Relational	"Ok, it's Saturday morning, I'm still wearing my dressing gown and my 7 year old daughter has been helping me to understand how to set up this blog." CS1
Relational	"May speak to [tutor] regarding this on Friday- am going to email her and ask if she intends to be there for a tutorial." CS1
Relational	"The amount of work each week did sometimes prove difficult being a single parent, working full time and having only a laptop between us at home. I did manage to complete most, but not all, of the tasks on time. Time-management is certainly something to improve for future modules, as well as the purchase of another computer, as my children use the laptop for their homework as did I for this module." CS1
Relational	"Personally I am making friends from the course so that they can empathise, understand and help me throughout the three years and vice versa. Nobody other than my fellow students and midwifes could understand me better if I had a difficult day on placement or university." MW1
Relational	"I have been under a lot of stress with balancing university work, home and work commitments and especially getting married in the beginning of the course. I was able to get through with the support of my family-taking my housework off me and support from friends to relax me and share the troubles we were experiencing. Overall with all that I think that stress motivated me to pass which I have done though I had and still have the potential to do better." MW1
Relational	"I have very supportive and interested friends, who want to know all about my course and what I am learning and doing." MW1
Relational	"I fear alienating my course mates because I have some prior knowledge" MW1
Relational	"The tutorial support was encouraging and when they wrote 'keep up the good work I felt I must be on the right lines." MW3
Relational	"Academically this will be a tough year. I have already started to develop plans for my practice project and have made contact with significant people for support. I have organised my learning needs and intend to make use of all available support from the university. I will discuss all plans with my personal tutor and will access her support on a regular basis. I have made arrangements to take part in various workshops run by the Learner development unit to develop my writing skills and develop a more confident attitude when carrying out presentations." MW3