



Joining the dots: using structured e-portfolio assignments to enhance reflection

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Although there has been an increased interest in the use of electronic portfolios in higher education over the last five years, relatively little is known about the potential of such tools to support the development of higher order abilities for students, such as reflection, in a structured way that is suitable for assessment. This paper reports the findings from a small-scale research which sets out to compare the outcomes of reflective assignments in two cohorts of participants in a Postgraduate Certificate in Professional Practice in Higher Education in the UK. Participants in the programme were asked to submit reflective accounts using an e-portfolio system as part of their formal assessment. One cohort completed the assessment using some generic guidelines of how to reflect and construct an e-portfolio page without a given template or structure, whereas another cohort was given a specific template with clear assessment criteria to gauge the assembly of their reflections. The authors, who are also tutors in the programme, analysed the submitted reflections following open coding procedures. The analysis found a tendency for the reflection in the first cohort to be merely descriptive without progressing to speculating objectively about answers to relevant analytical questions about the process involved in the ability under scrutiny. In contrast the assignments of cohort two were found to be more insightful in terms of assimilating random bits of materials, thoughts and self-questions into complete reflective accounts. These findings bring some evidence to support and indeed promote a more structured approach to reflective practice, which can be further enhanced through a carefully created e-portfolio template and associated assessment criteria.

Keywords: reflective practice, e-portfolios, assessment criteria, templates

Learning how to learn in a professional context

If participants in professional teacher training courses are to make the most of their opportunities to develop higher order abilities, then they too will have to adapt to new learning contexts and perhaps acquire a new skill of "learning to learn" (e.g. Brandes and Ginnis, 1986). There is still a lot of debate within this area as to the nature of adult learning skills (e.g. Hattie, Biggs and Purdie, 1996) and the role of reflection. However, one agreed factor is the need for learners to reflect on the process of learning. Reflection is becoming a dominant theme in study skills work and in the design of courses - including the use of reflection journals (Moon, 1999), often submitted in e-portfolios. Most of the models and frameworks of reflective practice are highly influenced by the work of Donald Schön (1983). A useful framework for describing the experience of learning, that includes reflection, is the Kolb Experiential Learning Cycle (Kolb, 1984).

In theory, this cycle may begin from experience or generalisation. More commonly the cycle begins from an experience on which the learner reflects, and through reflection creates a generalisation about what has been learnt.

The learner should plan to test out any generalisation in active experimentation, constructively seeking both confirmation and counter examples in the next experience; and so the cycle progresses. However, instead of having learners going through the various stages of reflection in an abstract way (i.e. simply following a model or framework of reflection to make them think ‘reflectively’) other scholars such as Boud (1988) , Cowan (2006) and more recently Coulson & Harvey (2013) suggested a more structured reflective approach. The structured reflective approach can be facilitated to engage the learner with self-evaluations of the quality of their reflections. An early step towards self-evaluation can emerge when learners are prompted by the tutor's guidelines to move further into their Zones of Proximal Development (Vygotsky, 1978). The self-evaluation aspect of development can be strengthened if the teachers provide adequate and appropriate structures for reflection (Moon,1999; Vlachopoulos and Cowan, 2010). It is a question of this paper whether e-portfolios can effectively facilitate such approaches to self-evaluation of reflective thinking.

The study

The work reported here aims to investigate the difference between unstructured and structured approach to reflection with an overall aim to inform the design of suitable e-portfolio structures and associated assessment criteria. The design of the e-portfolio structure and assessment criteria can facilitate the development of higher order abilities on the part of the participants in the Postgraduate Certificate in Professional Practice (PGCPP), which is organised and delivered through the Centre for Learning Innovation and Professional Practice at Aston University in Birmingham, UK. The PGCPP programme comprises three twenty-credit core modules (similar to the Australian programme units) and is delivered in blended learning format, which includes a number of ‘taught’ days (residential and away days), lunchtime seminars and the use of a Virtual Learning Environment (also referred to as Learning Management System) and an e-Portfolio platform (PebblePad). Two cohorts of participants took the PGCPP core module “Delivering a High Quality Learning Experience” during academic year 2011-2012. Both cohorts were required as part of their assessment to reflect upon and analyse their experiences of attending the residential and the away day, making sense of related literature over the course of term and developing themselves as teacher practitioners through their involvement in academic teaching. The first cohort (no=18) worked towards the completion of the reflective task in an unstructured way, meaning that they were introduced to Kolb’s Cycle and were advised to use it to create their reflective assignments in the e-portfolio. The second cohort (no=12) worked in a structured way, with a given e-portfolio template (which they could modify) and set assessment criteria (Table 1). The different assessment structure for the two cohorts provided the opportunity for valuable comparison of the experiences in the two distinct approaches. Both cohorts submitted their reflective accounts using PebblePad. Ethics approval was given by the University’s Educational Research Ethics Committee.

Criteria	Distinction	Pass	Fail
Self-scrutiny	Demonstrates an <i>open, non-defensive ability to self-appraise</i> , discussing both growth and frustrations as they related to learning in class and online. Risks asking probing questions about self and seeks to answer these.	Sometimes defensive or one-sided in the analysis. Asks some probing questions about self, but do not engage in seeking to answer these.	<i>Little or no self-scrutiny, minimal risk</i> in connecting concepts from class to personal experiences. Self-scrutiny tends to be superficial and factual, without self-reflection.
Connection to experiences	<i>In-depth synthesis</i> of thoughtfully selected aspects of past and current experiences (either as a learner or a teacher) related to your practice in your institution. Makes <i>clear</i> connections between	Goes into <i>some detail</i> explaining some specific ideas or issues from experiences related to the practice. Makes <i>general</i> connections between what is learned from outside experiences and	There is no attempt to connect <i>general ideas</i> or issues from experiences with the issue under scrutiny.

	what is learned from experiences and their own current practice.	their current practice.	
Connection to readings & other resources (assigned and ones you have sought on your own)	<i>In-depth synthesis</i> of thoughtfully selected aspects of readings and other resources related to the experience under scrutiny. Makes <i>clear</i> connections between what is learned from readings and the experience. Includes reference to at least four different readings other than those readings assigned for class.	Goes into more detail explaining some specific ideas or issues from readings related to the experience. Makes general connections between what is learned from readings and the experience. Includes reference to at least two readings other than those assigned for class.	There is no attempt to connect <i>general ideas</i> or issues from readings or other resources with the experience or issue under scrutiny.
Connection to class discussions & course learning outcomes and planning of active experimentation	Synthesize, analyze and evaluate thoughtfully selected aspects of ideas or issues from the class discussion as they relate to each experience under scrutiny. An excellent attempt to plan an action for improving learning and teaching in context.	Synthesize clearly some directly appropriate ideas or issues from the class discussion as they relate to the experiences discussed. Some attempt to plan an action for improving learning and teaching in context.	Restate some general ideas or issues from the class discussion as they relate to the experiences under scrutiny but there is no attempt to synthesize them or translate them into action.

Table 1: Assessment Criteria for E-Portfolio Reflective Assignments

Methodology

A semi-qualitative approach was adopted to collect data to help categorise the type of reflection reported by the participants. A coding scheme was developed by the authors to measure the type of reflection. The content analysis was based on the four main stages of reflection (Kolb, 1984). Our system has four broad categories (Reporting an Experience, Reflecting on Experience, Generalising from Experience, and Planning an Action). The reflective accounts submitted in PebblePad were segmented into 115 (for Cohort 1) and 172 (for Cohort 2) 'meaningful units', following a methodology developed for Verbal Data Analysis (Chi, 1997). The difference in the number of segments can be justified if one takes into account the difference in the number of participants in each cohort and hence the number of total submissions. The coding unit in this case was the 'syntactic unit' (e.g. sentence, paragraph). Each paragraph of the reflective account was segmented into sentences, which were then coded into one of the four main categories. All data coding and qualitative analysis was done using NVivo 8 and some data summarisation was carried out using Excel 2007. Inter-rater reliability was used to check the reliability of the coding with a Kappa agreement rate of 61% achieved between the two coders of the data.

Findings

There was a difference in terms of how much and at what level of depth participants in the unstructured (Cohort 1) and structured (Cohort 2) task arrangements reflected, with Cohort 2 participants contributed almost three time more comments coded under the 'Reflecting on Experience' code, as shown in Figure 2. Having traced back the changes made in the e-portfolio submissions it became clear that most of the deep self-questioning in Cohort 2 may have occurred as a result of the effective use of the given template in that it scaffolded more aligned connections between disparate thoughts and resources. In addition to this, we found some qualitative differences in the way that participants in the two cohorts approached reflective analysis. Participants in Cohort 2 expressed a greater number of feelings and exercised self-questioning, whereas participants in Cohort 1 were more oriented towards making claims and stating facts and evidence from the literature.

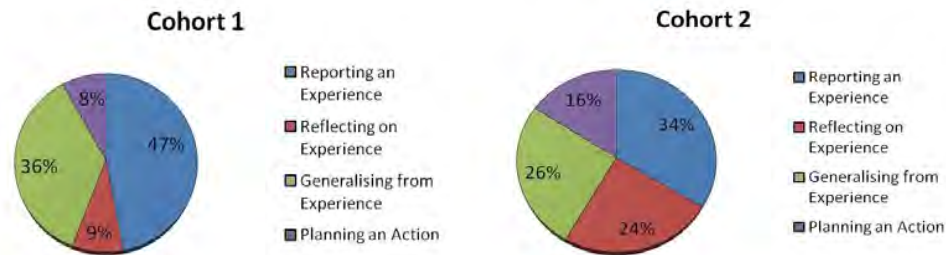


Figure 2: Reflective activity in the unstructured (Cohort 1) and structured (Cohort 2) paradigm

Implications for practice

The use of e-portfolios lends itself well to both unstructured and structured approaches to reflective practice. We argue in this paper that there seem to be some scope in promoting the latter approach and in particular giving participants templates to help them join the, often disjointed, dots of reflective journeys. It is imperative that careful consideration should be given in the design of assessment criteria, especially those that aim to develop the meta-cognitive conditions in which the mind can assimilate random bits of material, including those that have often been gathered serendipitously, from readings, conversations and experiences (Rose, 2013). E-portfolios can certainly help to join the dots of a reflective journey together as they provide the space and necessary tools for users to synthesise their thoughts. As reflection is a way to move from one place and space in another, the use of a well-considered e-portfolio structure and associated assessment criteria enables reflection to be practiced and documented more purposefully and systematically.

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