

## Implementation of the eLearning Lifecycle Model to Develop Reflection in Pre-Service Teachers

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This paper outlines the planned research into the use of an ePortfolio Environment to support the development of reflection in pre-service teachers. Reflection is a key skill for teachers to possess as they continue to learn into the future. It is a doctoral research project that involves the implementation of sections of the eLearning Lifecycle model (Phillips, Kennedy, & McNaught, 2011) within a PebblePad platform. The proposed environment will include examples, activities and interactions as part of an Enculturation Teaching Model (Tishman, Jay, & Perkins, 1993). The impetus for the activities will be the sections of the Framework for Teacher Reflection (Colton & Sparks-Langer, 1993). The implementation aims to develop a teaching environment that can be used in a variety of platforms to develop reflective abilities in pre-service teachers that will be used for continued professional development.

Keywords: ePortfolio, Reflection, eLearning Teaching Models, Pre-Service Teachers.

### Introduction

This doctoral research project developed from experience in working with pre-service teachers and the difficulty faced in developing reflection with these students. The study aims to identify a framework using an electronic learning platform that will assist in the development of reflection in pre-service teachers. The research proposes to utilize the PebblePad ePortfolio to scaffold the students' development of reflection. PebblePad was selected because it had been used in the action-learning project unit previously. The eLearning Lifecycle model developed by Phillips, McNaught and Kennedy (2011) was chosen as it follows a cyclic implementation with a structured framework for review and ongoing improvement tailored to an eLearning environment. The structure of the PebblePad ePortfolio and the experience of the researcher within the teaching unit meant an adapted implementation of the lifecycle could be planned.

Within the eLearning environment, an enculturation teaching model (Tishman, Jay & Perkins, 1993) is used to provide (1) examples of good practice (2) activity prompts to teach reflection and (3) a platform within which the students can interact with one another. This teaching model was originally developed to increase higher level thinking skills or the dispositions of thinkers and can be transferred to reflection, which also requires the use of metacognitive strategies.

As part of this teaching model, the planned activity prompts were taken from the areas of the Framework for Teacher Reflection (Colton & Sparks-Langer, 1993) that encompasses many components of reflective practice. It is anticipated that this model will provide the foundation for the activities and ensure there is a strong theoretical base for the prompts.

The overall goal of the research is to develop an outline of an effective electronic teaching environment that concentrates on the development of reflection in pre-service teachers. The outline may be transferrable to other ePortfolio teaching platforms and perhaps even other content or skill areas beyond reflection.

### Literature Review

The literature for this project comes from two key areas that are very briefly outlined here. The first is reflection, its importance in education, and the methods trialled to develop it. The second is the area of ePortfolio in terms of providing a teaching environment within which to develop these reflective abilities.

### Reflection

Reflection has been identified as being important in education because in the future, “schools will be restructured communities of learning requiring empowered, [and] reflective decision makers” (Colton & Sparks-Langer, 1993, p. 45). With the rapidly changing global climate, there is a need for lifelong learners who are able to reflect on their abilities and make changes with these times (Yost, Sentner, & Forlenza-Bailey, 2000) and continue to learn into the future based on these experiences.

In a conceptual review of reflection in higher education, Rogers (2001) identified a number of key common theoretical factors that emerged from the authors of reflection. These included a clear understanding of the terms being used in relation to the general definition, the timing and the context; the outline of the antecedents; the contextual factors; the definitional component; the process; the methods and the desired outcomes of the process (Rogers, 2001). These factors need to be clearly outlined to all stakeholders involved in the development of reflection in any given context to ensure a shared understanding of the concept and the process.

The Framework for Teacher Reflection (Colton & Sparks-Langer, 1993) provides a model from which all of these theoretical factors can be identified. The model is divided into three sections that focus on (1) action in terms of an action research style of approach to developing reflection; (2) constructing knowledge and meaning in relation to choosing an area of focus and discussing this with others and; (3) the professional knowledge base that consists of the background of the reflection and the context in which it occurs. The model also identifies attributes of reflective thinkers, which lead to the identification of the proposed enculturation teaching model.

For this planned research, the reflection by the students is completed as part of an action-learning project. The aim of the project is to encourage reflection that Dewey (1933, p. 9) defines as “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusions which it tends”. The goal is to move beyond the recording of events *after* the incident (reflection that Schon describes as *on-action*) to taking action at the time of the ‘surprise’ to make a positive change to practice (reflection *in-action*) (Schön, 1995, p. 30). The students’ projects are implemented in a practical situation with the issue of focus being chosen by the students based on previous experience within the classroom and should follow cycles of action research (Grundy, 1995).

The overall aim of the action-learning project is to not only improve the students’ abilities within their chosen area of practice but to also provide experience with the process of action research and reflection as a catalyst for ongoing professional development. The recent development in electronic portfolios provides the option to use them in teaching environments and includes another component of the standards required by the Accreditation of Initial Teacher Education, being the use of technology.

## **ePortfolio**

The use of electronic portfolios or ePortfolios has increased recently, due largely to government policies (particularly in the United Kingdom) requiring their use (Clark & Eynon, 2009; Joyes, Gray, & Hartnell-Young, 2009; McAllister, Hallam, & Harper, 2008). An ePortfolio is “a collection of authentic and diverse evidence, drawn from a larger archive representing what a person or organization has learned over time on which the person or organization has reflected, and designed for presentation to one or more audiences for a particular rhetorical purpose” (Barrett, 2005, p. 5). This definition immediately identifies that a person may have several levels of an ePortfolio from a working document to a presentation portfolio (Pellicione, Dixon, & Giddings, 2005) that is adapted to meet different purposes (Clark & Eynon, 2009).

Joyes et al. (2009, p. 487) provide a useful extension to this description by adding that “behind any product, or presentation, lie rich and complex processes of planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback.” The authors go on to discuss that these processes make up ePortfolio-based learning which is receiving increased attention from the Joint Information Systems Committee (JISC) that works with colleges throughout the UK in digital technologies (Joyes et al., 2009). It is this learning process that is the feature of the ePortfolio that led to its use in this planned research.

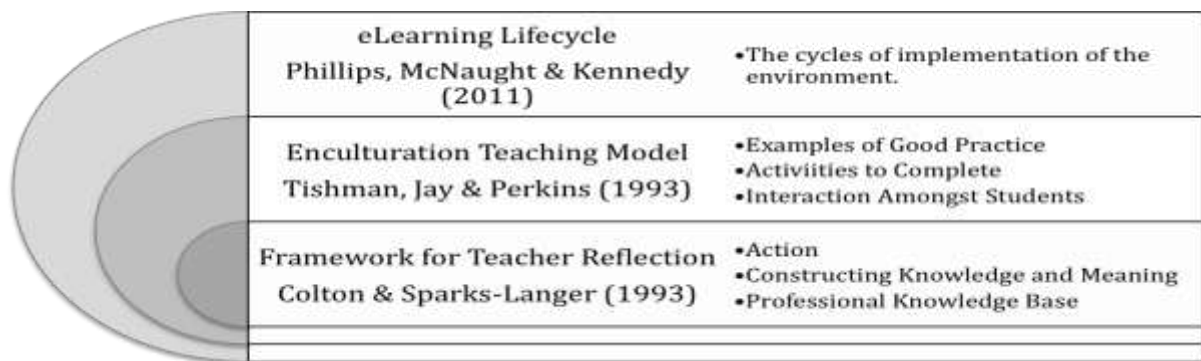
Dr Helen Barrett, who has been labelled the “grandmother of ePortfolios” (Barrett, 2010), advocates that ePortfolios be utilized as learning tools. In her 2005 white paper, Barrett highlights the processes of learning and assessment involved in an ePortfolio and proposes that the technology is now available to “engage students in active participation” and reflection through “assessing and managing their own learning” (Barrett, 2005, p. 23). There are a number of commercial platforms available for ePortfolios and many have self-directed help packages within them that guide the learner through the process (Pinney & Edwards, 2007). This structured support is important in the development of reflection (Lamont, 2007). The platform of PebblePad has been

shown to be user friendly and to allow for communication with others (Pinney & Edwards, 2007). It has also been demonstrated to play a significant role in the development of reflection when implemented with ongoing support (Bloxham, Boyle, & Thanaraj, 2009). This then provides a strong base for further research.

## The Research Outline

The planned research will involve the implementation of sections of the eLearning Lifecycle Model developed by (Phillips et al., 2011). The cycles of this model are designed to develop and evaluate electronic learning environments based on the principles of action (McNiff & Whitehead, 2006) and design-based research (Hoadley, 2004). The process involves the implementation and review of the environment to make improvements with each iteration. This project proposes to use the model from Cycle 3, the trialling of the environment through one review at Cycle 4, followed by recommendations being made for practice as part of Cycle 5 (Phillips et al., 2011).

Within the eLearning environment the execution is based on the enculturation teaching model (Tishman et al., 1993) and the framework for reflective teachers (Colton & Sparks-Langer, 1993). Figure 1 shows the relationship of these components within the research. The overall implementation of the case study is planned within the cycles of the eLearning lifecycle (Phillips et al., 2011). The PebblePad platform has a “Gateway Resources” facility that provides a platform within which the teaching model can be realised. Within the resources, the students can be provided with access to (1) examples of good practice (2) prompts or activities aimed at the components of reflective thinking and writing and (3) a space where comments and interactions about this process can be shared (Tishman et al., 1993). The planned prompts and examples are based on research into the development of reflection that can be placed within the components of the Colton and Sparks-Langer (1993) framework for teacher reflection.



**Figure 1: Relationship of Research Components**

The choice of these models and frameworks came from experience with the teaching platform with previous groups of students and the understanding that a strong theoretical base was required in the planning of the prompts. In the past, the students remained very focused on the use of the platform as an assessment tool rather than a vehicle for the development of reflection (Roberts & Maor, 2012).

Data will be collected using a mixed methods approach including feedback questions on each of the prompts, interviews and learning analytics as detailed below:

- a set of questions will accompany each activity prompt to identify whether the task was useful and if so why. The students will be asked to answer these as a blog reply.
- interviews will ask the students about their experiences with the environment. The focus group interview environment is planned to allow students to encourage each other and provide a range of viewpoints on the PebblePad environment. The individual interviews will be more focused and use examples of each students writing as the basis for questions as well as allowing comparison of student’s responses to log data generated within the PebblePad platform that identifies the students’ usage patterns.
- learning analytics will be used to evaluate possible links between levels of reflective writing and engagement determined by usage log data from within PebblePad. This numerical data may add to the details from the interviews about the use of the prompts within the environment.

The implementation and data collection for this research will occur within 2012 with final reporting planned for early 2013.

## Proposed Outcomes

The outcomes of this research for practitioners will be a better understanding of how to scaffold pre-service teachers to reflect through an ePortfolio environment. This will include methodologies of action research, strategies to engage the students in reflective discussions, and formats to demonstrate reflective abilities.

The principles of the ePortfolio environment identified in the research may also be transferable to other platforms to expand the use of ePortfolio as a teaching and learning tool. In terms of theory, the research will add the layer of the learning environment to existing framework for reflection developed by Colton and Sparks-Langer (1993); provide the context identified as required by Rogers (2001) and add to the knowledge of ePortfolio-based learning environments as discussed by Joyes, Gray and Hartnell-Young (2009).

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