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# Researching an eLearning Environment for Developing Reflection in Pre-service Teachers: Details of Cycle 4

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**Abstract:** This paper outlines the implementation and review of an eLearning environment within the PebblePad ePortfolio platform aimed at the development of reflective abilities of pre-service teachers. This review is of Cycle 4 of a larger research project that utilizes the eLearning Lifecycle (Phillips, McNaught & Kennedy, 2011). This stage involved the trial and review of prompts within the platform aimed at developing an enculturation teaching environment (Tishman, Jay, & Perkins, 1993). At this stage of the implementation, the students appear to engage with prompts; particularly those that they see have a direct link with assessable pieces of work although the interaction hoped for in the environment is not occurring. The planned changes to the environment for Cycle 5 are also introduced here.

## Introduction

This research paper explores a stage of the implementation of the eLearning lifecycle (Phillips et al., 2011) as a promising framework for evaluating electronic learning environments. The process focuses on improvement in eLearning environments and the use of technology for teaching.

This research developed from experience with final year pre-service teachers and the need for them to reflect more deeply at the latter stages of their degree. The university involved requires some of these students to complete an action-learning project in their final year that provides a different perspective on reflection. The students are also required to submit a teaching portfolio in which they demonstrate and provide evidence against Australian Initial Teacher Competency Standards which include the use of technology as a component (AITSL, 2011). To facilitate this, the action-learning unit used of an ePortfolio that the students had not previously used. Due to these factors, the overall focus of the research became the development of reflection in pre-service teachers and the use of an ePortfolio based learning environment reviewed using the eLearning Lifecycle.

## Reflection

Although the students had been involved in reflection throughout their degrees, until this point, there had not been a focus on the process of utilizing these reflections towards improvement in practice over a prolonged period of time. In this research, reflection is defined 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” (Dewey, 1933, p. 9). Reflection is important in lifelong learning and education as a means of ongoing development and making links between theory and practice (Yost, Sentner, & Forlenza-Bailey, 2000). It also to allow teachers to learn to accommodate diverse student needs (Pedro, 2005). It is perhaps because of this importance that the development of these skills is difficult (Kember et al., 1996) and requires focused attention or coaching (Gun, 2011).

The Conceptual Framework for Teacher Reflection developed by Colton and Sparks-Langer (1993) may provide a clear focus to the development of reflection drawing from a range of literature in the area. As such this framework was used to plan the prompts aimed at scaffolding the development of reflection. These prompts were implemented through the ePortfolio platform of PebblePad version 2.0.

## ePortfolio

ePortfolios have been used in education for a number of years although to date this has been primarily for assessment purposes (Allan, Zylinski, Temple, Hislop, & Gray, 2003; Raison & Pelliccione, 2006). The advances in technology have meant that ePortfolios are now also viable platforms for the education of students (Barrett, 2005) and have increased in use, particularly in the UK driven by government policies (Clark & Eynon, 2009; Joyes, Gray, & Hartnell-Young, 2009; McAllister, Hallam, & Harper, 2008).

Within the PebblePad ePortfolio platform, the students can have access to (1) exemplars of good practice; (2) spaces within which to interact and (3) activity prompts aimed at the development of reflective skills that form the components of the enculturation teaching model (Tishman et al., 1993). In trialling this though, it was important to have a formal structure in which to review and research the implementation of this model. The eLearning Lifecycle offers this model.

#### eLearning Lifecycle

The use of electronic learning environments is increasing in education but it is important to not just transfer traditional content to an electronic medium (Phillips et al., 2011). The teaching strategies and the mode of delivery need to be updated and adjusted in a process of trial and re-trial.

Developed from research into both action learning and design-based research methodologies, this model (Table 1) provides a cyclical process of trial and review towards evaluation and research of electronic learning environments. Although the representation here is linear, the design of the model is such that it can be commenced at any stage and also be implemented in a non-linear fashion (Phillips et al., 2011).

Design-based research phases		Analysis of problem	Development of solutions			Testing of solutions
Cycle	Scenario	Analysis	Design	Develop	Implement	Questions to ask
0		Analysis of problem				What is the problem and how can we solve it?
1	B		Design e-learning artefact	Documentation		How good is the design?
2	B		Refine design	Develop e-learning artefact	Initial trial	Does the e-learning artefact work technically as it should? How can it be improved?
3	C	Refine problem analysis	Design e-learning environment which embeds e-learning artefact	Develop e-learning environment	Pilot	Does the e-learning environment work as its designer(s) intended? How can it be improved?
4	C		<b>Refine design</b>	<b>Revise e-learning environment</b>	<b>Deploy to students (full trial)</b>	<b>How can the e-learning environment be improved?</b>
5	D	Refine problem analysis	Refine design	Revise e-learning environment	Deploy to students (live)	How well does the e-learning environment work to support student learning?
6	D		Refine design	Revise e-learning environment	Deploy to students (live)	How well does the e-learning environment work to support student learning?

Table 1: The eLearning Lifecycle (Phillips, McNaught and Kennedy, 2011)

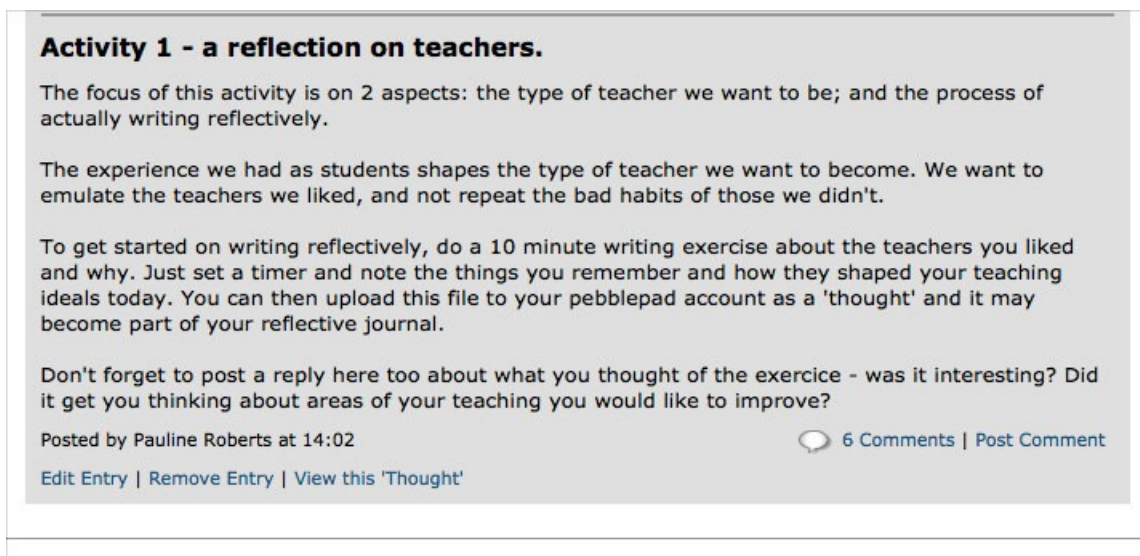
For this research project, the process began with Cycle 0 and the analysis of the problem as part of the planning process for the research proposal submission. It was identified that students were having difficulty achieving a critical level of reflection through the action-learning unit. Throughout Cycles 1 and

2 the tutors who were working within the unit looked at ways to engage the students through the PebblePad environment. As the developers of the platform had already designed the asset types and other artefacts to enhance reflection within the environment and the teaching unit was already developed, much of the initial design phase of Cycles 1 and 2 had already been completed. It was decided to add to this platform and assist the students further in the development of reflection, prompting activities would be placed in the 'Gateway Blog' facility that the students could access throughout the teaching unit. Through initial trials and reviews, at Cycle 3 refinements were made and recommendations for changes outlined (Roberts & Maor, 2012). This paper then focuses on the pilot implementation at Cycle 4 that reviewed whether the environment worked as it was intended and what improvements could be made.

## Implementation

At the beginning of the year-long teaching unit, the 84 students in the cohort were provided with the unit guide and access to the PebblePad ePortfolio platform. Initial contact was made via a face-to-face meeting that was recorded for students who were unable to attend. In this meeting, the unit objectives were outlined and directions were provided to access the various "help" videos already available in the platform. It was hoped that by reviewing these, the students would become familiar with the platform and develop an initial understanding of what they were required to do.

A short time after this meeting, the first prompt was placed in the Gateway Blog. The students were asked to reflect on their own classroom experience as both a student and a pre-service teacher to identify the type of teacher they wished to be. This falls under the Professional Knowledge Base section of the Colton and Sparks-Langer (1993) framework by looking at prior experience and personal views and values. The graphic in Figure 1 provides the view the students had when they accessed the Gateway Blog and shows the text of the first activity prompt. This prompt came from the work of Phillips and Carr (2006) and was designed to encourage the students to begin to look at the traits they liked in teachers and therefore the types of classroom environment they wished to develop in the future.



**Activity 1 - a reflection on teachers.**

The focus of this activity is on 2 aspects: the type of teacher we want to be; and the process of actually writing reflectively.

The experience we had as students shapes the type of teacher we want to become. We want to emulate the teachers we liked, and not repeat the bad habits of those we didn't.

To get started on writing reflectively, do a 10 minute writing exercise about the teachers you liked and why. Just set a timer and note the things you remember and how they shaped your teaching ideals today. You can then upload this file to your pebblepad account as a 'thought' and it may become part of your reflective journal.

Don't forget to post a reply here too about what you thought of the exercise - was it interesting? Did it get you thinking about areas of your teaching you would like to improve?

Posted by Pauline Roberts at 14:02 6 Comments | Post Comment

[Edit Entry](#) | [Remove Entry](#) | [View this 'Thought'](#)

Figure 1: Graphic of Reflection on Teachers activity prompt.

As can be seen from this graphic, there were a number of comments (6) posted by the students regarding this activity prompt with the response ranging from positive feedback on the process:

"I just completed this activity as a blog and it was great. I made me think of why I want to become a teacher and who was responsible for some of my great memories as a student. I hope that with practice I can leave fond memories like the ones I have with my own students."

to a more unexpected outcome of the process that highlighted the impact of negative role models:

"What I did find useful with this exercise is it also reminded of some of the negative experiences that have helped to shape the type of teacher I don't want to be!!!"

This was a very rewarding start to the process but unfortunately some logistical issues with

practicum placements for the action research projects arose. These were outside the control of the staff involved with the unit impacted but on the timing and implementation of the research.

The next round of prompts were focused on setting up smaller groups for the online discussion, providing guidelines for setting up a blog as a reflective journal, an outline for how to complete the upcoming Plan/Rationale assessment task, and step by step instructions for attaching required documents to the submissions.

There were no responses to the offer of smaller discussion groups. The reflective blog post also received no comments although of the 84 students enrolled in the unit, the usage log data from the platform showed that there were 104 individual blogs created. This demonstrates that the students were accessing and acting upon this prompt.

The other two prompts implemented here that were related to the assessment tasks did attract a number of comments in the blog facility although these were generally questions around issues with the implementation of the requirements and clarification of steps identified. The technical issues were quickly resolved and the questions answered directly through this platform. There was however one piece of feedback that provided another positive moment to the research when a student commented: "Thank you Pauline! That worked well! Starting to get the hang of this PebblePad!"

Once the students were able to begin the actual implementation of their individual action research projects the majority of discussion was directed to tutors via the LMS for the teaching unit. At the beginning of the research, the participants were told that the blog assistance was not for individual project questions around topics and implementation, so the use of LMS was appropriate for these ongoing personal concerns.

The next prompts were again focused on an assessment task, this time the Progress Report submission and the uploading of evidence to this. Figure 2 provides a view of this prompt in its Webfolio format that the students were required to use as the asset type for all submissions in the unit. The list down the left hand side allowed the students to access the various components required for the submission with details of how it was linked to the marking criteria from the study guide.

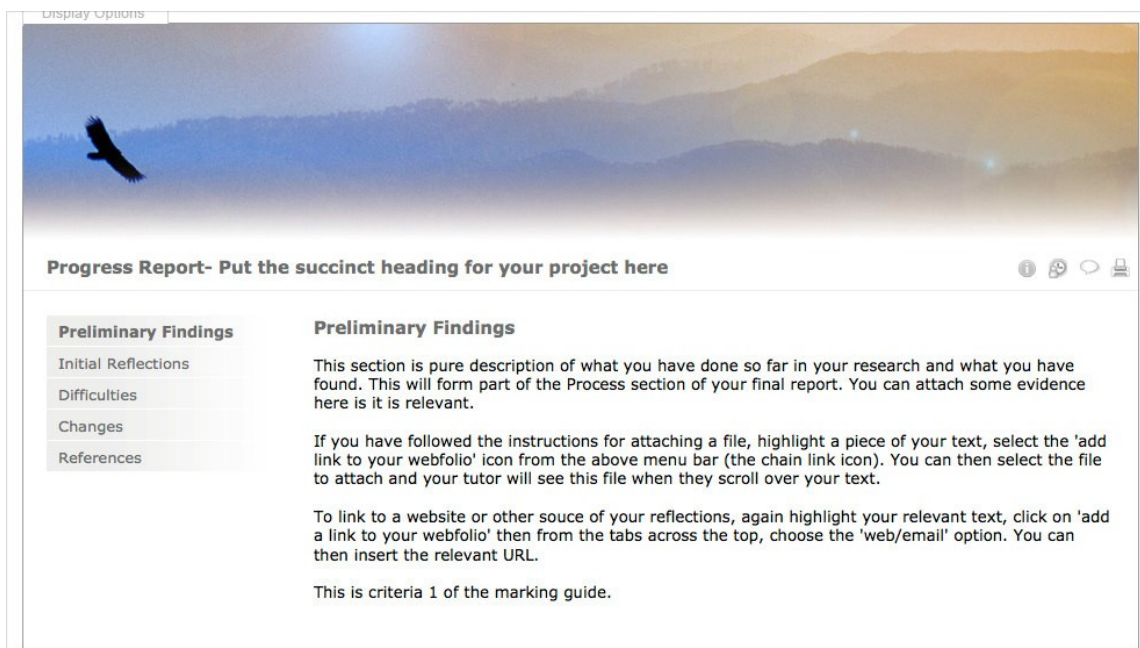


Figure 2: Progress Report outline.

There was again a positive piece of feedback: "Thanks Pauline! This has been very helpful and now makes this assignment a lot clearer and therefore a lot less stressful" amongst the numerous questions to clarify the process, and to correct technical problems encountered in following the guidelines.

It was at this point of the implementation, that a review was undertaken to identify the effectiveness of the prompts so far, to make changes towards the new semester as part of Cycle 5. The review utilized discussions with students, examination of the comments made so far in the blog and further

investigation of literature into the development of reflection.

## Discussion

Overall the implementation of this cycle of the research had been reasonably effective. The comments and questions described above showed that some of the students were accessing the models and the activities provided via the Gateway Blog. The assessment items also appeared to be completed from the models provided in the blog and were of an acceptable level, although there was still a distribution of grades that usually occurs amongst a cohort of this size. By viewing usage data collected within the platform on asset types and numbers, there was generally a steady increase in the number of assets being created by students throughout this timeframe in a range of formats. There also appeared to be fewer emails asking for help in relation to the platform itself throughout this time than had been experienced in previous years, which may indicate the prompts provided this required assistance.

At the end of this phase of the implementation, the two key problems identified were the level of use of the discussion options for the students to share and develop their ideas, and the level of engagement the students were having with the prompts in the platform. Both of these factors were important for the planned enculturation teaching model and without a strong level of engagement, it would be difficult to draw strong conclusions about the effectiveness of the overall environment. From this, the changes were planned for the next cycle of implementation.

It was decided that a series of focused questions would be provided to the students as part of each activity prompt to try and stimulate this discussion. These groups of questions were planned to engage the students in the online discussion that had been identified as an important in the development of reflection (Schön, 1995) and also to promote the provision of feedback on each of the prompts.

The other key change made was to include the citation of the reference for each of the activity prompts provided to demonstrate to the students the strength of the theory behind the activity. This was also included to allow the students to follow up and gain further information on the individual prompt if they found it particularly useful.

It was hoped that the addition of these two components would improve the eLearning environment that was then implemented for another full trial to be reviewed for effectiveness and ongoing improvement.

## Conclusion

The eLearning Lifecycle (Phillips et al., 2011) has so far provided a useful framework for the implementation and review of the electronic learning environment. The ePortfolio platform of PebblePad is accommodating the planned teaching model effectively and the students are accessing the prompts, which appear to be having an impact on their research projects. The ongoing implementation will continue to add to this process as the research continues on to cycle 5 and beyond.

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