

Project-based professional development: Reflections in and on action implementing blended learning with primary school students

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Abstract

Professional development programmes are increasingly using online design and delivery methods to enhance professional and organisational development opportunities for teachers and schools. Designing learning experiences that are customisable to the professional contexts of teachers can be challenging for programme developers. Project-based learning embedded within the learning design can support the evolution of quality practices in online and blended learning in the professional contexts of teachers working in schools, particularly when combined with reflection in and on action. This paper provides an overview of a postgraduate a course designed by the first author that successfully implements this approach for professional development purposes. This is followed by a description of the school-based projects implementing blended learning online with Web 2.0 tools and a learning management system with reflections of the second author, a teacher who completed the course in 2011, that illustrate the potential value and impact in a school.

Introduction

The New Zealand Government has made a commitment to ensure 97.7% of schools and 99.9% of students in New Zealand will be able to access ultra-fast broadband by 2015 (Ministry of Education, 2011). The value of teacher and institutional professional

support in the design and implementation of quality online and blended learning practices in New Zealand schools is therefore recognisable, providing teachers with the range of support that will encourage and empower them to explore this new teaching and learning environment (Barbour, Davis & Wenmoth, 2011). Teacher professional development and support will help to ensure that initiatives such as New Zealand's ultra-fast broadband realise the breadth of their potential educational gains (Eickelmann, 2011; Davis, 2010; Owston, 2003).

One of the challenges providing professional development in this area is to design learning experiences that fit well with the professional contexts and practices of teachers working in schools (Macdonald & Poniatowska, 2011). One approach that effectively addresses this issue is the use of project-based learning, whereby teacher participants embed their learning within their own school and organisational context, and importantly reflect in and on their learning journey. This paper begins with a description of a course design that successfully implements this approach for professional development purposes, and then presents the multi-project reflections of Aleta Chowfin, a Canterbury primary school teacher enrolled in the course in 2011, as an example of its effectiveness.

Description of the course

EDEM628: 'Best practices in online teaching and learning' is a year-long optional course within the University of Canterbury Masters of Education degree and also one of the four courses within the [Postgraduate Diploma of Education \(e-learning and digital technologies\)](#). The course is fully online; course members interact as a learning community within a space housed in the university's learning management system (LMS), a version of Moodle. Course participants tend to span the education sector (i.e. primary to tertiary), and may also include people who work in the health and other sectors (e.g. professional development consultants). The creation of such a diverse community of learners provides plentiful opportunities for participants to learn with and from others by engaging online in collaborative exercises, quality conversations, peer

feedback activities and shared professional reflections. These joint activities are fostered through the use of a range of features available in the learning management system (e.g. wikis, journals, and discussion forums) and other Web 2.0 tools (e.g. Skype, blogs). The course design enables participants to simultaneously engage with the professional community in their workplaces – benefits that have proven to be advantageous for both the student and their organisation (Morrow & Bagnall, 2010; Dabner & Davis, 2009; Mackey, 2009). This is encouraged through the design of project-based learning activities undertaken in each student's school or organisation.

Project-based learning: pilot studies

The project-based component of the course involves participants conducting two pilot studies, whereby participants design and use an online teaching/learning space and Web 2.0 tools for teaching a group of their own students. Each participant is given an online teaching space in the university LMS for teaching purposes, however they can use their school's LMS or another online option instead if this better suits their professional context.

In the first pilot study participants conduct an institutional review with their professional colleagues to gauge the readiness of their school/organisation for online and blended learning, an exercise that many participants have reported had value informing developments at an institutional level. This review also informs the design and implementation of their first two to three week teaching project conducted with a group of their students. This may be fully online or can adopt a blended learning approach. The breadth of course content is as variable as the participants each year, however valuable formative peer and lecturer feedback is provided in the areas of site and conceptual design, a range of literature is used to inform and evaluate the project, and professional reflections and feedback are shared throughout the process.

Participants identify an area of particular interest and/or need at the conclusion/evaluation stage of the first pilot study. This becomes the focal area for their

second pilot, forming a bridge between the two projects. Participants again self-select their content area in the second study, but now teach for a longer period of time, working with the same students or a new group of students. Literature related to their selected focal area is identified, shared within the learning community and used to inform their course and site design. Peer and lecturer feedback is again provided throughout the process, and students are encouraged to clearly identify and articulate their future needs and goals at the conclusion of the study. Reflection in and on action plays an important role throughout both projects.

Reflecting in and on action

Donald Schon (1987), a pioneer of reflective practice, identified two types of reflection particularly relevant to education: 'reflection-in-action' and 'reflection-on-action'. Both reflective processes are embedded within the EDEM628 course design with an emphasis placed upon reflection-in-action. Schon (as cited in Griffiths, 2000, p.541) highlights three core features of the reflection-in-action process:

- Conscious (though not necessarily articulated in words);
- Critical, involving questioning and restructuring; and
- Immediate, giving rise to 'on the spot' experiment and new action.

Course participants experience reflection-in-action cyclically as they work through two pilot studies, and document their thinking within online discussion forums and professional reflective journals shared within the course online community. Reflection-in-action is also valuable as conversations are held between teachers and their students (whereby peers provide formative feedback regarding the site, course and learning design), and when participants share their projects with colleagues in their school learning community.

Reflection-on-action is perhaps more common in teacher education courses, however less emphasis is placed on this in this postgraduate course. Griffiths (2000) describes

reflection-on-action as ranging from “teachers reviewing action in the recent past, to reflective deliberations in which they evaluate and make sense of past experience” (p. 544). The first reflection-on-action in the course enables participants to identify their focal area for the second pilot study, and the second to articulate some specific goals for their future professional development in online and blended learning.

The professional dialogue that emerges when reflections in and on action are shared within online journals in the learning community has proven to be profound. Although participants utilise these journals as individual thinking spaces in the first semester, by the second semester they become highly active spaces that participants use, individually and collaboratively, for literature sharing, rhetorical questioning, debate, providing and receiving social, emotional and professional support, metacognition, and sharing insights. The next section of the paper illustrates this, as Aleta describes two school-based pilot studies she implemented in 2011 and shares some of the reflections from her professional learning journey.

Aleta’s first project and reflections

Aleta Chowfin currently works with year five and six pupils at Middleton Grange, a non-denominational Christian school in Christchurch that caters for students from new entrants to Year 13. Aleta worked with a group of eight students for two weeks in her first pilot study in 2011, presenting them with a set of goals and activities that would engage them in an online environment and enhance their learning of the narrative genre. She focussed upon exploring their interaction with text when encountered in an online environment in different forms, including videos, wikis, books and movies. The goals for the students in the pilot were:

- To develop an understanding of how a narrative is constructed, with a focus on the characters, setting, complication, resolution and re-orientation
- To compare and contrast two movies and share a learning conversation with a group about the plots

- To design and share a story map and provide an outline of the plot using VoiceThread.

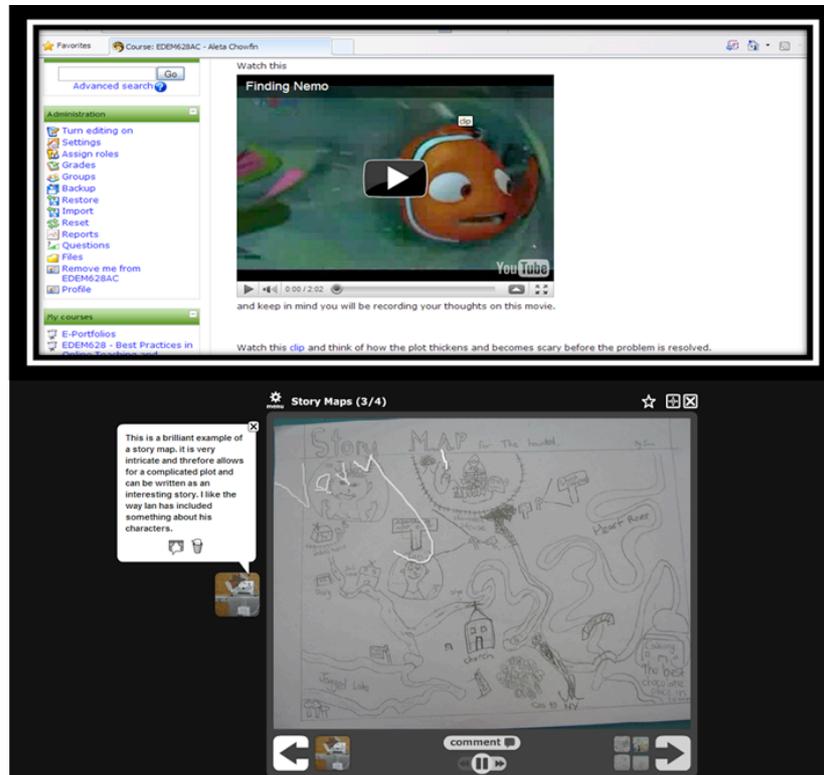


Figure one: Screenshots from Aleta's first pilot study showing examples of video and interactive tools

Through the use of a variety of tools (see figure 1) students interacted with different texts across a range of media and reflected on the material via chats, forums and VoiceThread. Aleta shares her thinking about the pilot design:

My intention was to 'hook' in my students so they would be keen to engage with the course content. Commenting on the way the 'Neomillennial' use the web, Neilson (1997) argues that they prefer to do something as opposed to just read the text on the web. Tosh and Wermuller (2004) indicate that students tend to create their own social communities which enable them to increase their own learning and provide each other with resources. Yet there seems to be a vast barrier

that exists for young learners for web pages which are text intensive. The challenge was therefore to develop and design pages that would have a balance of text and images and encourage collaboration and a sharing of ideas. I used a variety of video clips and interactive tools to engage and encourage the learners.

Ongoing formative assessment enabled Aleta to adapt the learning design to meet the emergent needs of the students over the two-week period:

Improvements were made at various levels through the cyclic approach of action and reflection. As I walked through this journey of designing, analysing and refining, I was also going through a learning process; always on the lookout to tweak and change tasks and experiences to enhance the learning journey of the students. As result of these reflections my confidence levels improved substantially and I became more fluent in the use of the tools, consciously and subconsciously transferring this classroom-based pedagogy to my online teaching. I've discovered, in line with the research, that online teaching is no longer just about the relationship between the teacher and the student. There is a new dimension: the relationship between me and the technology-mediated environment. This new dimension requires me to change, adapt and develop new pedagogies, which will allow me to continue to be a learner in the online arena.

In addition, she decided to share her pilot study endeavours with interested colleagues at her school:

From the onset I was intrigued by the research presented by Evans and Bellett (2006) on establishing effective e-learning communities within the teaching profession. The feasibility of empirically testing out some of the research within our professional learning team (Year 5 & 6 teachers) and allowing for the school leadership team to preview the course added another dimension to the pilot course. Importantly, I make a conscious

effort to ensure that the study was linked into the learning already happening in the classroom.

Aleta conducted a comprehensive evaluation at the end of her first pilot, reviewing the site design, course content, learning activities and associated student outcomes, and her facilitation of the learning processes undertaken in the online environment. Some significant insights emerged:

Building on the social network model the children were able to take their learning in the classroom to the next level and experience a higher level on engagement. Their world was suddenly linked to the classroom and games and activities from the media and their gaming area was used in relevant ways at home and at school. The community was extended to the parents as they viewed and interacted with the material that their children were viewing. Even though this was a pilot course I was able to see a tremendous improvement in self-esteem which has directly impacted classroom learning for one of the participants.

This reflection-on-action highlighted areas of key learning for both students and teachers, and also provided Aleta with the opportunity to identify areas of interest to explore further in her second pilot study:

Having established the importance of social networking, it is logical to adopt a blended learning approach in the classroom and build up a repertoire of tools to allow for deeper learning. Instead of creating a learning space I would like to go one step further and create a 'learning landscape', an arena to socially and cognitively engage. As I step into this second journey, I am conscious of the implications of the dynamic nature of the classroom with its myriad of needs. The accelerated rate, at which some of the learning occurred, makes it imperative to streamline, reassess and align the facilitation I provide, linked to the outcomes that I intend will be co-constructed with the students.

Aleta's second project and reflections

Aleta's second pilot was entitled 'The Journey of Fibre to Fabric'. This was designed as an integrated unit linking Science, Social Sciences and Social Enterprise with a literacy focus on persuasive text. The students explored the properties of fibre and how clothing was marketed, by investigating the creation of cotton fibre and tracing its journey to become a tee-shirt. The students explored an online game called [Coco's AdverSmarts](#) to learn about the persuasive marketing thread of the unit.

To make the learning authentic, her students designed a 'team tee-shirt' and presented their designs at a fashion show. The proceeds from the show supported an organisation which provides women with an alternate means of employment and produces Fair Trade tee-shirts for sale around the world.

Aleta's digital technology goals for the second pilot were that her students would:

- Use Web 2.0 tools (Animoto, Slide Rocket and Avery) and self-assess their use of these tools against the Structure for Observed Learning Outcomes (SOLO) taxonomy developed by Biggs and Collis (1982) rubrics.
- Use multimedia web sharing tools to collaborate, share resources and showcase their work
- Invite the guests to the fashion show using an online tool and
- Use Survey Monkey to provide feedback to the teacher on the effectiveness of the learning design.

Aleta's focus was to provide scaffolded asynchronous learning for the 29 year six students involved in the pilot, incorporating the use of Web 2.0 tools alongside 'thinking' maps to align the cognitive thinking levels of the students and provide differentiated learning. Aleta decided to underpin the learning design with the SOLO taxonomy (Biggs and Collis,1982). Constructed around a framework of 'learning to learn', she developed a common language of learning with the students and involved

them in the co-construction of learning rubrics, utilising [Hooked-on-Thinking SOLO Google Applications](#) (Hook, 2010). Aleta presented a clear rationale for this:

The use of Web 2.0 tools alongside 'Hooked on Thinking' maps to align the cognitive thinking levels of the students is a fresh way of streamlining learning. I have been running a class website since the culmination of the first pilot course to keep the children acquainted with the web environment and making the idea explicit that they had an academic presence alongside a social one. I think the class was ready to take its learning onto an open source platform provided by Google and explore some of the apps.

Aleta utilised her own website for this project. This was linked to the school website, further developing her 'learning landscape' in a space now available to all students, staff and parents.

The screenshot shows a website titled "Team 12's Learning Journey" with a sub-header "From Fibre to Fabric". The page content includes a "Dear Team," greeting and a paragraph about a learning journey based on fibre and fabrics. A sidebar on the left lists dates and group links. Red boxes and arrows highlight specific elements: "The 4 groups for the course. Total number of students-29." and "The 4 week course: Each week is a hyperlink and elaborates for the activities for the week."

Figure 2. Screenshot of Aleta's online learning space for her second pilot study called Team 12's Learning Journey

At the conclusion of the pilot Aleta completed her summative evaluation: her reflection-on-action. This evaluation also demonstrated continued reflection-in-action and further

revealed her growth as an educator keen to adopt a blended learning approach in her teaching:

The pedagogy and the tools had been married well; the comprehension gauged, the students self-assessed and the results mapped against a rubric based on the SOLO taxonomy and Hot Maps. My course had been successful. Yet, I felt that I was just venturing out and there was so much to learn and unlearn. Amidst the obstacles I came upon the realisation that I was not the first to walk this path and I had the luxury of the wisdom of the mistakes and triumphs of many that had gone before. My job was then to be open and honest and continue to add my reflections to the research and pedagogies that now are being woven so intricately into the fabric of my teaching.

The two projects Aleta implemented with her primary school students positively impacted her own teaching practices. There is also the suggestion this impact was much broader because she so willingly shared her learning with her colleagues:

As the walls of my own classroom come down, I am eager to encourage my colleagues to have a preview into the workings of these Web 2.0 tools and experiment with them. Establishing my own space on Google, I have now started networking with interested staff to give them a taste of things to come. My school is currently exploring the adoption of Moodle and e-portfolios. I hope my colleagues feel the pulse of things to come with the same excitement I feel. The sweep of change in education, which allows us to teach in such a dynamic environment, is truly worth treasuring.

Conclusion

This paper illustrated the impact a project-based approach to professional development in online and blended learning had on one EDEM628 course participant and their school. The need to engage teachers in online and blended learning professional

development has been recognised in the USA and New Zealand (Davis, 2011; Larreamendy-Joerns & Leinhardt, 2006; Barbour, Davis & Wenmoth, 2011). The imperative for professional development in New Zealand will continue to increase with the implementation of the ultra-fast broadband initiative in schools. The course aims to meet this need by providing meaningful opportunities for educators from multiple educational contexts to interact online with members of their profession, and then apply and adapt their knowledge in their own teaching contexts through the implementation of school-based projects. Reflection in and on action, as an ongoing disciplined act throughout the project implementation process, further supports professional development and fosters the development of professionally reflective practitioners who can both critique and celebrate their new learning and practices.

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