Advancing Professional Learning with Collaborative Technologies

Robert Fitzgerald
University of Canberra, Australia

The future has already arrived. It's just not evenly distributed yet.

William Gibson

INTRODUCTION

In the 21st century, learning and Internet-based technologies are becoming increasingly interwoven. For a growing proportion of children in the developed world, blogs, social networking, multiplayer online games, and instant messaging systems are figuring significantly in their daily lives (Sefton-Green, 2004; Somekh, 2004). Education systems have, for a long time, recognized the potential of technology to enhance and enrich teaching and learning; however, the realization of that potential has more often than not been disappointing (Cuban, 2001; Somekh, 2001). In Australia, we continue to receive strong statements from the Government about the educational importance of integrating ICT into teaching and learning (cf. Learning in an Online World, MCEETYA, 2005); but the reality is, schools and universities are struggling to achieve such goals.

BACKGROUND

The Partnerships in ICT Learning (PICTL) project was an Australian Government Quality Teacher Program funded by the Department of Science, Education and Training (DEST), and the Australian Curriculum Studies Association (ACSA). Eight projects were initiated across each state and territory, and recommendations were made to the DEST about school-based models for ICT learning in preservice and teacher professional-learning communities.

This chapter reports on the Australian Capital Territory (ACT) project that was designed to explore the use of collaborative technologies with preservice teachers. Research has shown that the preparation of ICT-savvy teachers is a pressing problem that requires schools and teacher education institutions to work together to develop more effective approaches (Downes,

Fluck, Gibbons, Leonard, Matthews, Oliver, Vickers, & Williams, 2002). The effective integration of technology into teacher education courses positively impacts on school ICT practices (Franklin, 2007). The work reported here was founded on the understanding that ICT integration requires educators to consider issues of innovation and reform in their own practices before they address wider integration issues. The ACT project was a pilot research project designed to integrate collaborative technologies into a preservice pedagogy unit as a way of initiating a professional dialogue about the use of information and communication technologies (ICT).

The key aims of this project were to:

- Investigate how various technologies, such as blogs and team learning systems, can be used to foster collaboration; and,
- Assist preservice teachers to reflect upon their understanding of the conditions that motivate teachers to expand their use of ICT.

Project Design

In this project, we worked with 12 final-year preservice teachers enrolled in a core Secondary Teaching Studies (Technology) unit at the School of Education and Community Studies at the University of Canberra. In this pedagogy unit, we devised a series of university-based experiences, where the students learnt to use new technologies, and considered the facilitation models that would promote ICT integration. The ACT project made use of two emerging technologies: the Zing meeting system (http://anyzing.com); and Elgg (http://elgg.net), a blogging and social networking application. While these students had already completed a core ICT in Education unit, they had not previously used either blogs or Zing.

The Zing system connects multiple keyboards to a shared collaborative space, and was originally designed as a meeting system for business. Work with Zing has shown that when users meet in this way, they are able

to carry out complex thinking, support sense making, and foster the decision-making processes (Fitzgerald & Findlay, 2004). In this project, we used Zing both to illustrate an innovative collaborative application and, as a way of conducting focus groups for the research aspect of the project. Early in the semester, the students were introduced to Zing through a series of hands-on training sessions.

Elgg was used as a tool to help the students begin to explore in depth the application of blogs and, in a broader sense, electronic portfolios and social networking. Elgg is a robust and flexible platform that is being used by a wide variety of educational groups. The developers, Ben Werdmuller and David Tosh, describe the platform as a personal learning landscape that combines the Web 2.0 functionalities of blogs, e-portfolios, and social networking. Each student was required to create an Elgg account, and to use the blog functionality to record their observations and reflections throughout the semester.

DATA COLLECTION, ANALYSIS, AND RESULTS

The project generated data using a variety of processes. The Elgg system, with its blog functionality, allowed the preservice teachers to document their experiences in this project. The Zing team learning system allowed us to conduct a series of focus-group meetings with the students. Midway through the project, we also ran a PMI (plus-minus-interesting) survey. Our analytical methods drew primarily on thematic and qualitative approaches to make sense of the data. With some of the data, we were able to use cloud tags to visualize the data, based on keyword analysis. The cloud tags are weighted frequency graphs of popular keywords that are often generated dynamically. The combination of the data, in conjunction with our experience in teaching and working within this unit, meant that we were able to develop quite a rich picture, even though it was based on a small number of students.

Focus groups: Talking to Preservice Teachers about ICT

We asked the preservice teachers to consider which skills, capabilities, and knowledge they thought current school students would need in order to be successful in

the future. In their focus-group discussions, the group identified a number of key themes including children's competence with ICT, the importance of life-long learning skills, an appreciation of ethical issues (i.e., values and morals), and the importance of developing self-confidence and a belief in themselves. Taking the text generated by this discussion, we created a cloud tag that represented the weighted frequency of key words in their discussion (Exhibit 1). There was a high degree of congruence between the cloud tag and the key themes that the group enumerated.

Exhibit 1. What skills, capabilities and knowledge do school students need?

When then asked "What does ICT in learning mean to you?", they identified themes in the data that recognised that ICT was strongly implicated in future learning, particularly with regard to enhancing learning and communication. The "problems" of ICT with respect to access and equity were also evident in their discussions. Again, generating a cloud tag (Exhibit 2) produced a picture that was congruent with the focus-group themes.

Exhibit 2. What does ICT in learning mean to you?

Reflections on Using the Personal Learning Landscape (Elgg)

With our preservice teachers, we attempted to create a virtual space that allowed them to engage in a community of practice (Wenger, 1999). The Elgg system offered features of Web 2.0 technology (Alexander, 2006) that emphasised the importance of connectivity and engagement. The metaphor of a personal learning landscape was entirely congruent with the project's aim of fostering learner–centred approaches. Elgg offered these students both a virtual space and a digital identity

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