deanz
Journal of Open, Flexible and Distance Learning

Blended Online Learning in Initial Teacher Education: A Professional Inquiry into Pre-service Teachers' Inquiry Projects

Anne-Marie Hunt, College of Education, University of Canterbury

Abstract

Online and blended learning bring opportunities and challenges, including more opportunities for authentic activities (Gikandi, Morrow, & Davis, 2011). Blended online environments are now a common mode for pre-service teacher education, providing interesting opportunities to develop and showcase alternative approaches that blend with practice in the field. This paper presents a case study of an online course that supported 55 student teacher inquiries into the practice of teaching. The author describes some successful strategies, using a range of e-learning tools, including the university's Moodle learning management system, in the professional inquiry focused course that she led. The study informs course and programme redesign to encourage student teachers to develop their own networks of practice during pre-service tertiary education.

Keywords: inquiry learning; online teacher education; preservice teacher education; professional inquiry

Introduction

High-quality engagement in learning can result when learners are supported to creatively study issues of immediate and future concern (Bransford, Brown, & Cocking, 2000). Learners who are studying to become teachers also need to become familiar with common practices in their profession, including teacher inquiry. "Inquiry based learning" and "Teaching as inquiry" (Ministry of Education, 2007a, p. 35) are gaining momentum in teacher education and the teaching profession as a whole. A study (Mackey & Evans, 2011) in online postgraduate courses designed for teachers as professional learners illustrates engagement with authentic learning activities, and promotes meaningful learning and transferability to their communities of practice. In these postgraduate courses, the online course community was blended with the school communities in which the students practice (Mackey, 2009).

The importance of promoting teacher learning was recognised in the recent British Education Research Association (2014) report on building the capacity for a self-improving education system:

> [This self-improving education system] is about empowering teachers, school and college leaders, and all who work with them, to better understand how they might enhance their practice and increase their impact in the classroom and beyond. In short, it is about developing the capacity of teachers, schools and colleges, and education systems as a whole

> to self-evaluate and self-improve, through an ongoing process of professional reflection and inquiry. . . . A focus on inquiry-based practice needs to be sustained during initial teacher education programmes and throughout teachers' professional careers, so that disciplined innovation and collaborative inquiry are embedded within the lives of schools or colleges and become the normal way of teaching and learning, rather than the exception. (p. 6)

The many roles of digital technologies in preservice teacher education were described by Davis (2010) as including opportunities to develop knowledge and skills, with integrated communication and technology, and including online study and inquiry. However, little is known of how student teachers can be supported to begin such inquiry-based learning during their studies before they begin to practice in schools, which may be particularly challenging for students whose main mode of study is online. This paper illustrates how such inquiry learning can occur and, in doing so, illustrates the many roles played by digital technologies in initial teacher education today.

The author shares ways in which an empowering shared group experience enabled University of Canterbury (UC) students and staff to be connected, confident, and collaborative learners and teachers. She provides a case study of her work as the coordinator and teacher of a graduate course that included four personalised inquiry learning and teaching learning outcomes (see below) for a cohort of 55 primary student teachers in the distance mode of a larger programme.

TEP1360 learning outcomes

1. Identify and select from a range of appropriate resources and inquiry processes for gathering information in response to the 'Big Question', which was formulated for their inquiry at the conclusion of the TEPI260 course.
2. Critically examine and process the gathered information to create meaningful outcomes to present to an audience, in a format to be negotiated with a mentor.
3. Actively contribute to their mentor group learning community through regular meetings and feedback, including their presentations.
4. Articulate and record in their journal their developing understanding of how inquiry-based experiences link to best classroom practice and to the processes inherent in authentic learning.

The overarching research question thus became: What were the effective blended e-learning strategies and tools that enhanced this personalised inquiry-based learning and teaching experience?

Research methodology

This workplace case study was stimulated by Richardson and St Pierre's (2005) work on writing as a method of qualitative inquiry. The approach to the research was a professional inquiry (Timperley, Wilson, Barrar, & Fung, 2007) into the author's work as an experienced practitioner in online and blended teacher education over several decades. According to Larreamendy-Joerns and Leinhardt's (2006) literature review, maturity can inform online education. For example, Hunt et al. (2011) describe the culturally sensitive blend of online initial teacher education of the university's parallel 3-year degree programme, to which she has contributed since 1997. Hunt has been a leading teacher educator in the UC Rotorua Centre, working mainly in New Zealand's North Island in an environment that includes blended online and campus-based studies.

This paper reports on the teaching and leadership of a professional inquiry course that took place in the final 2 months of a 15-month graduate diploma of education in 2014. Most of the enrolled

students aimed to become provisionally registered primary school teachers in New Zealand. Eight students were invited to give consent for the inclusion of a selection of screen shots and/or comments from their inquiry presentation and contextual statement, which they uploaded and shared in the online learning management system (LMS) course site in late February. In her email message well after the close of the course, in which she invited students to participate, Hunt told her students: "The reciprocal peer and teaching (ako[1]) learning that was observed and experienced was highly significant and hence late in semester one I decided this inquiry process was worthy of sharing with an international educational audience." The university granted ethical approval during the semester following the course. Of the eight students invited to volunteer their material to be included in this research, seven responded and agreed.

The paper shares a sample of 'big questions' and 'presentations' that these students created in their professional inquiry course, led by Hunt. The sample includes current topics of innovation in New Zealand classrooms, such as modern learning environments, bring your own device (BYOD), i-Pads in the classroom—and more general professional needs of teachers, such as catering for specific-need learners and enhancing learning and teaching in the arts. The paper also includes a document analysis of student comments from the consenting participants' reflective contextual statements and some anonymous end-of-course student feedback statements that were submitted and fed forward online through the UC Centre for Evaluation and Monitoring (CEM).

A blended context for inquiry learning in initial teacher education in 2014

The 55 students in the 2014 distance cohort were spread throughout Aotearoa New Zealand—from Auckland in the north, to Invercargill in the south. A few of these students had transferred from being on campus in the previous semester. The mode of study was mainly online, complemented with experience in primary schools. All students were experienced users of the university's Moodle LMS, named Learn. When they entered this teacher education programme in February 2013, the students knew that they needed to complete a personalised inquiry assessment before their final professional practice placement in a primary school at the end of the graduate diploma in 2014. During their 2 weeks on campus at the start of the programme in February 2013, all students were also able to experience some of the previous cohort's inquiry presentations. This enabled the students to visualise the process, start to think about their own area of inquiry, and consider how they might present it to a group of their peers.

During 2013 the students explored and reflected on possible inquiry topics. They tended to focus on topics about which they had an emerging curiosity or developing passion, and which they felt were needed (by themselves or their peers) as they prepared for teaching.

In November 2013 each student used the Moodle assignment tool to submit a brief inquiry proposal in the understanding that they could change it over the summer. In this way the students could, during their 2-month summer break, immerse themselves in their selected topic and begin recording their emerging questions as "wonderings". Some wonderings from one student's journal page were: "What ICT is there in schools?" "Is it being utilised?" "How can it be used to its potential?" "How and where are the resources for teachers to upskill in ICT?"

When students arrived for the 3-day intensive on campus in Christchurch at the start of 2014, most had decided on the platform they intended to use for their inquiry journal. A large paper scrapbook was the most popular form of journal (see Figure 1 for an example). Google documents were used by one pair collaborating on an inquiry, and another student used Weebly.

[1] Ako is grounded in the principle of reciprocity. Both the teacher and learner give and receive taking responsibility for their own learning and that of Māori learners (Ministry of Education, 2008)

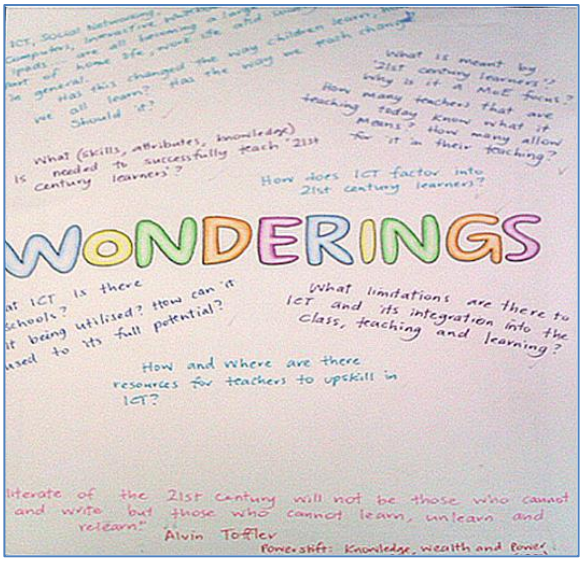

Figure 1 An example of a student's initial wonderings

Blended e-learning

A blend of online and face-to-face learning and teaching is a characteristic of all courses offered by UC. This cohort was enrolled in the university's distance mode called the Flexible Learning Option (FLO). Students had had 2 weeks on campus at the start of their graduate diploma and, at the time of this course, were in their third semester of the Graduate Diploma in Teaching and Learning (Primary) qualification. The third on-site intensive gave students and lecturers the opportunity to collaboratively explore the inquiry course's site. Hunt had spent considerable time restructuring the course site since July 2013 when she became coordinator of this course; to do so, she had leveraged her 17 years of experience in supporting and actively listening to FLO students. She was therefore able to confidently (with the support of an e-learning advisor) ensure that the Learn site had the scaffolding that FLO and on-campus students required throughout 2014. (See Figure 2 for the course home page in Learn.)

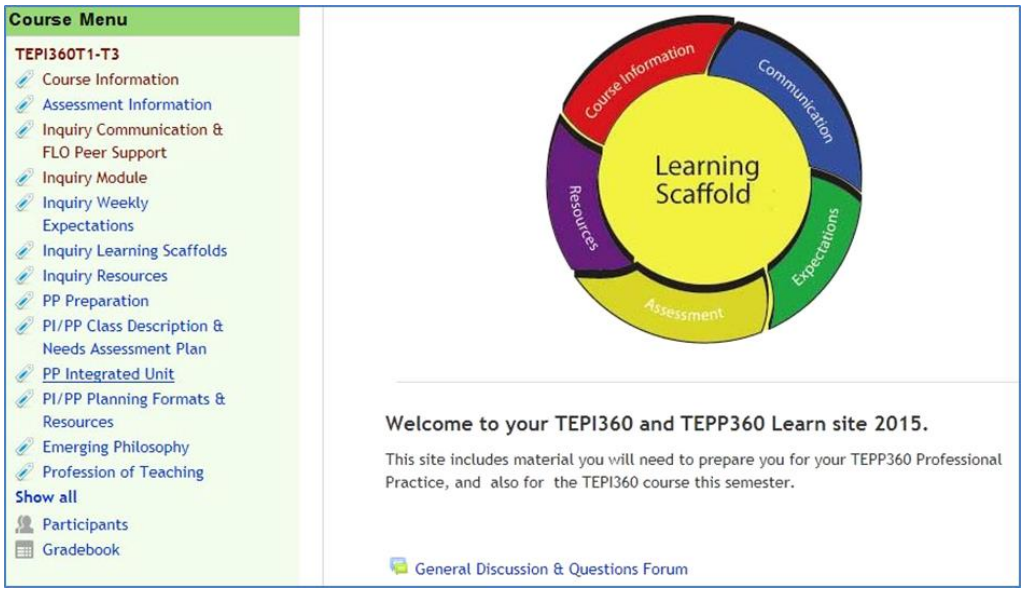

Figure 2 Learn home page

The sections in the left-hand menu that were relevant to this inquiry project were: Assessment Information, Inquiry Communication & FLO Peer Support, Inquiry Module, Inquiry Weekly Expectations, Inquiry Learning Scaffolds, and Inquiry Resources. Typical comments in the anonymous end-of-course teaching CEM survey showed that students found the design useful:

> You put all of our material on Learn in a logical way and then showed us exactly where we could find it. (CEM survey)

> Everything was clearly laid out under specific headings on the Learn site. (CEM survey)

Suggested edits or updates were promptly made to the Learn site by Hunt as course coordinator. The Learn course and the on-site intensives enabled students to get to know Hunt and a new on-campus lecturer who observed and provided support. During the 3 days of the intensive the students formed mentor groups that would provide communication and support over the next 4 weeks of personalised inquiry.

During the first intensive day, students supported each other as they launched further into inquiry, sharing immersion experiences, crafting individual (or paired) emerging big questions, and sharing possible experts from their personal networks. The peer relationships established during the two earlier semesters contributed to the strength of the group dynamics and the success of the 2014 inquiry experience (observations recorded by Hunt). The students recorded their experiences, findings, and reflections in a journal of their choice and continued their inquiry journey and mutual support online after returning home.

Mackey and Evans (2011) consider the role played by participants in determining engagement and connections in and across the boundaries between online learning communities and professional practice. They promote socially networked learning, and emphasise the role of the learner in defining their learning pathways. This course supported Mackey and Evans's argument that there are strong links between formal online learning opportunities and authentic learning in such communities of practice.

Learning to learn

Inquiry learning is often equated to learning to learn. Strozzi-Heckler (2014) states:

> Learning how to learn is one of the most powerful ways of dealing with the changes of today's world. In this time of accelerated change learning to learn gives us a competitive advantage. To succeed in the future, we must be learning individuals in learning organizations. (p. 1)

According to Strozzi-Heckler (2014), many possibilities open for us when we learn how to learn. We see that we can change and we see how we can coach others to change. The possibilities for coordinating with others are enhanced and we become more capable of producing a future that takes care of our concerns. Although Pohl and Dixon's (2005) "lift off to learning" inquiry rocket was the original course designer's model of choice (see Figure 3), students were encouraged to draw on an alternative model if they found one that suited them better.

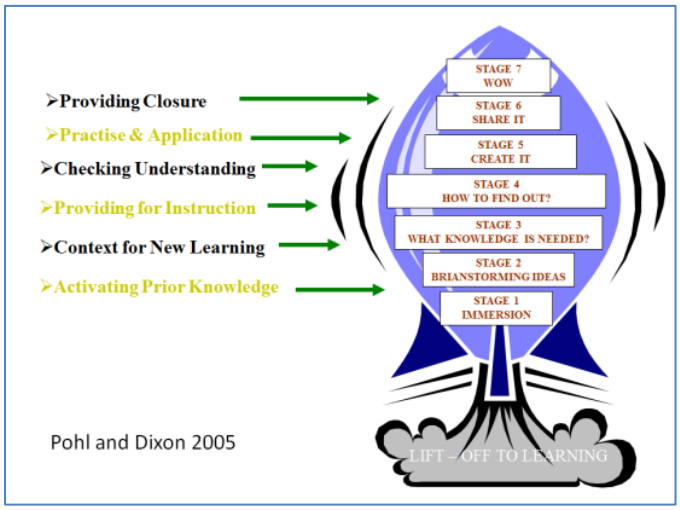

Figure 3 Pohl's model as used for students' inquiries
© M. Pohl http://www.thinkingeducation.com.au/

One 2014 student drew in her journal a visual representation of her own inquiry model as it emerged during her inquiry. Such journal reflections were powerful evidence of personal growth and a developing understanding of the inquiry process. Many students also commented on how the experience of a personal professional inquiry prepared them to understand what their learners might experience when using inquiry learning, and what they might feel when undertaking teaching as inquiry (Ministry of Education, 2007a, p. 35) in their future careers.

The students' 'So what?' questions were just as important as their big questions. Hunt asked students to ask themselves: "How could my Inquiry make a difference for myself, my peers and my future learners?" A response to this question was expected in their hard-copy or online journals immediately after their big question. In 2014 some examples of the big questions and related So what? questions were:

What iPad applications currently enhance classroom learning?

- So what? Give back a database of iPad apps that myself, my peers and current practitioners could refer to when we needed them in the classroom to enhance a lesson, unit or inquiry.

What are Modern Learning Environments and will they impact student's learning?

- So what do we, as beginning teachers, need to know to work successfully in a MLE?

How can mobile devices and apps be used to engage students in literacy?

- So what? Learners achieving understanding through "telling it their own way—in a way that's relevant to them".

Online support

Weekly synchronous chat session times were scheduled in Learn before the students left the campus. In 2014 these sessions became optional rather than a requirement because student feedback showed that online chat was overwhelming for some. In 2014 the student:staff ratio was 40:1, which was a dramatic increase over 2006 when the mentee:mentor ratio was 9:1. Other communication tools were also used. Regular Skype calls were preferred by the pairs working together on an inquiry and by several individuals supporting each other. Emails were also used

for peer and lecturer support. In addition, Hunt used her professional judgement and would occasionally phone a student to listen to and discuss their needs. A speedy response to student emails was seen as vital, and was always provided on the same working day. Written anonymous student feedback supports Hunt's view:

> Prompt phone calls to answer questions—very, very helpful during Inquiry. (End-of-course written feedback)
>
> Regular checking of emails/[LMS] to ensure timely feedback & answers to questions was greatly appreciated. (End-of-course written feedback)

Expert networks

Xiaodong, Schwartz, and Bransford (2007, p. 68) report that "multiple perspectives of experts point out a number of important features that the students did not notice". Therefore, for the "How will I find out?" stage of Pohl and Dixon's (2005) inquiry model (see Figure 3), the students were expected to seek out a few varied experts, and to gather information and perspectives for the big question of their inquiries. Many engaged with experienced teachers, some of whom were past mentors or associate teachers for that student or for a peer. School leaders were also popular experts, and a few education consultants made themselves accessible. Peers also used each other as experts and sought their perspectives.

Websites, articles, and library books were also considered to be experts in this context of inquiry. These resources were helpful during the 'Immersion' and 'How will I find out?' stages of student inquiry, and when they were waiting for a response or the availability of their human experts. Some students found themselves going back and forth in the inquiry model stages and reflecting, in their journal, on the need for flexibility. For example, one student wrote: "I feel that I have experienced the process of inquiry in my own way and I am now in a much more powerful position from which to teach it".

The strategies that students chose to gather information from experts mostly emerged around week 2 of their structured 4-week inquiry process. Interviews in person, by Skype, or by email were most common. Many also used online surveys (Survey Monkey). Students felt empowered by using such online tools, often for the first time, and the resulting skill development was clearly evident in many journal reflections.

Students found expert websites, articles, and Twitter extremely helpful, especially when faced with the probable and expected roadblocks that commonly affected their progress. Students had been warned that these roadblocks were highly likely—and that the most common would probably be lack of response from an expert. How to get around these roadblocks was discussed while on campus and throughout the following 4 weeks. The reality of busy teachers and principals (who were likely to be experts) at the beginning of the school year was often not appreciated until personally experienced.

Online forum participation in Learn was another strategy to support students and their peers through the frustrating times:

> The forums set up allowed students to contribute to each other's Inquiries and promoted active participation. (End-of-course written feedback)

Self-, peer and occasional lecturer support and/or feedback were encouraged throughout these 4 weeks. Guidelines were provided for the 4 weeks in Learn's Weekly Expectations. Students found these guidelines useful when they hit a roadblock and to set their weekly goals and next steps.

Contextual statements, presentations and peer feedback

> "Requiring us to present our Inquiry to all on line was excellent and is a great resource for us all." (Student reflection)

During the fourth week, each student (or pair) uploaded a one-page summary (a contextual statement), with their visual presentation, into Learn. This contextual statement was an overview of their inquiry journey. It helped the students to reflect on their inquiry journey and put the presentations and reflections into context for their peers and the staff. Some students also chose to offer their peers support materials, such as a page of tips or a pamphlet, for easy reference. Students were provided with an online template and required to give written feedback to at least six peers.

A range of presentation tools was used. Powerpoints were popular; however, the availability of such tools as Prezi (which the author and course leader modelled during the on-site intensive) and some forms of presentation such as Weebly and Animate (new to most students), were also used. Figure 4 shows Weebly as used by one student to present her inquiry into "Experienced teachers' advice for a Beginning Teacher", which included sections such as The First Day, Routines, Relationships, Management, and the Physical Environment.

Figure 4 A student's inquiry: "Starting with your own class . . . wondering how to get off on the right foot . . . I spoke to teachers with over 75 years of teaching experience between them." Presented with Weebly

In Figure 5 the student's presentation of their big question: "What's the big deal about bullying?" was presented with Animate to create a cartoon as a role play. The student said:

> My inquiry led me to explore bullying issues as well as inquiry itself, how it fits into the curriculum and what it essentially looks like in the classroom. (End-of-course written feedback)

Figure 5 An inquiry presentation using Animate

Discussion: Teaching as inquiry in the future

One of the recommendations in the 2014 British Education Research Association report on building the capacity for a self-improving education system, was to revise the "framework for initial teacher education . . . such that enabling teachers—and future teachers—to engage with research and inquiry becomes one of the hallmarks of 'outstanding' practice" (p. 31). Such evidence-based research and student feedback support this student's feedback:

> I believe some of the other courses could be more effective if they were structured in the same way as Inquiry. (End-of-course written feedback)

When asked which courses they thought could use the inquiry process, the students' common response was "Literacy". The students felt literacy was a huge topic to get to know in a short time and, if they had been able to select an aspect to explore through inquiry and then share the topic with their peers, they might have got a greater, deeper, and richer understanding. Hunt promptly shared this perspective with the programme and literacy course coordinators.

Such inquiry learning experiences in pre-service teacher education are most likely to prepare graduates to continue their inquiry-based learning journeys in their profession. *Teaching as inquiry* (Ministry of Education, 2007b) includes a visual statement (see Figure 6), promoting "Teaching [and learning] as inquiry" (Ministry of Education, 2007a, p. 35) as recommended by Timperley et al. (2007).

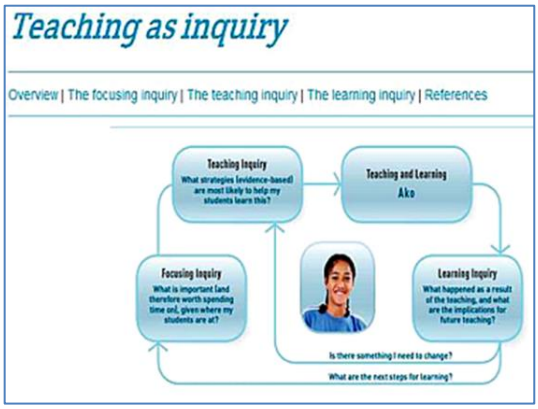

Figure 6 Teaching as inquiry (Ministry of Education, 2007b)

Since 2014, increasing numbers of New Zealand schools have expected their teachers to implement this approach (personal observation). Many New Zealand teachers who select an area of inquiry and use this process, individually or collaboratively, use online and digital tools to record and share their inquiry journeys and findings with colleagues (see for example Mackey, Davis, & Stuart, 2015 submitted; Ripp, 2014).

The concepts of personalised, collaborative, and co-constructed inquiry learning emerged in this study. Timperley, Wilson, Barrar, and Fung (2007) proposed a sequence of inquiries for teachers' professional learning and development that combine the elements in such a co- and self-regulatory learning cycle. They explain "co- and self-regulatory" thus:

> Teachers collectively and individually identify important issues, become the drivers for acquiring the knowledge they need to solve them, monitor the impact of their actions, and adjust their practice accordingly. . . . A key assumption underpinning these co- and self-regulatory learning cycles is that for inquiry to be effective it needs to occur at three inter-related and parallel levels: student, teacher, and organisation. (p. 44)

This UC pre-service teacher education inquiry project has shown such co-construction throughout the past decade.

Furthermore, Hunt argues (as a key theme for this paper), that blended e-learning is the future—not just for students at a distance from a university campus (as emphasised in this case study), but also for on-campus student teachers and practicing teachers in Aotearoa New Zealand schools. Mackey and Evans (2011) extend this theme by suggesting there is considerable potential for online learning communities to support teachers' professional learning in schools. A key to realising this potential will be the redesign of online courses to encourage participants to develop their own networks of practice in and beyond the course parameters. Such redesign will need to value learning that is synchronised with, and situated in, professional practice; encourage learners' often invisible interactions with those outside the formal course structure; promote the sharing of work and school-based examples in the online environment (especially cross-sector interaction); and facilitate critical reflection that focuses on the links between theory and practice, and between new and existing beliefs, attitudes, and practices.

Conclusion

Further developments in the UC College of Education are already underway. They will extend our knowledge of e-learning in primary pre-service teacher education (see, for example, Abbiss & Astall, 2014; Dabner, 2015). Reflective inquiry and the early establishment of student teachers' own networks of practice, including e-learning, will continue to be developed.

Student teachers who experience an inquiry process in their pre-service teacher education programmes are now better prepared, as learners and teachers, to meet the challenge of using it in their own teaching practice. Hunt has observed increased motivation for personal learning by both students and staff during all 4 of the years she has facilitated this course. Personalised learning and ownership of an inquiry are powerful motivators. We need to enable student teachers to select more of their own big questions and learning pathways in more courses and assessments. Tertiary staff who provide support and scaffolding through blended e-learning facilitate a deeper engagement and the opportunity for a wider range of new and relevant learning.

An inquiry process is an empowering group experience that models the effective teamwork expected of student teachers in their future employment. The reciprocal learning and teaching experienced by peers and staff was significant throughout this study. Peer support and guidance created a quality group experience. The semester 1, 2014, group were, for Hunt, significantly

strong, connected, confident, collaborative learners and teachers with clear reciprocal roles. This was ako. Ako has been evident through the last decade; however, in 2014 ako has been part of a future focused, inclusive and modern practice. Students showed increased motivation to put this learning into practice as beginning teachers in their professional practice. As new qualifications are designed globally, and blended e-learning courses are updated, Hunt recommends that student feedback be continually fed forward to ensure courses are engaging, and to maximise the learning for all involved. The author also recommends inquiry learning and teaching to other programmes and professions within Aotearoa New Zealand and globally.

Acknowledgement

The author acknowledges the students who contributed to this course and those who gave permission for their learning to be observed, analysed, and reproduced.

References

Abbiss, J., & Astall, C. (2014). Responding to shifting contexts for initial teacher education in New Zealand. In *Seeking cohesion in a teacher education programme: Weaving conceptualisations, context and courses.* AARE–NZARE (2014) Conference Symposium, Brisbane.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school* (expanded ed.). Washington, DC: National Academy Press.

British Education Research Association. (2014). *Research and the teaching profession: Building the capacity for a self-improving education system*. Final report of the BERA-RSA Inquiry into the role of research in teacher education. Retrieved from http://www.thersa.org/__data/assets/pdf_file/0004/1543450/BERA-RSA-Research-Teaching-Profession-FULL-REPORT-for-web-2.pdf

Dabner, N. (2015). Weaving digital citizenship within pre-service teacher education: Preparing graduate students for high-quality educational practices within modern learning environments and the virtual world. Las Vegas, Nevada, US: Society for Information Technology & Teacher Education International Conference (SITE), 21–25 Mar 2015. SITE Conference Proceedings 2015(1) 3115–3121.

Davis, N. (2010). Technology in preservice teacher education. In P. Peterson, E. Baker, & B. McGaw, (Eds.), *International Encyclopedia of Education 8*, pp. 217–221. Oxford: Elsevier.

Gikandi, J. W., Morrow, D., & Davis, N. E. (2011). Online formative assessment in higher education: A review of the literature. *Computers & Education*, *57*(4), 2333–2351. http://dx.doi.org/10.1016/j.compedu.2011.06.004

Hunt, A-M., Mackey, J., Dabner, N., Morrow, D., Breeze, D., Walker, L., & Davis, N. (2011, May). Culturally sensitive blended learning for future teachers in challenging times. *DEANZ Magazine*, pp. 1–4. Retrieved from http://www.deanz.org.nz/home/images/newsletters/May11.pdf

Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of Educational Research 76*(4), 567–605.

Mackey, J. (2009). Virtual learning and real communities: Online professional development for teachers. In E. Stacey & P. Gerbic (Eds.), *Effective blended learning practices: Evidence-based perspectives in ICT-facilitated education* (pp. 163–181). Hershey, PA: Information Science Reference.

Mackey, J., Davis, N., & Stuart, C. (2015, submitted). Leading a future focused school. Set: Research Information for Teachers.

Mackey, J., & Evans, T. (2011). Interconnecting networks of practice for professional learning. *International Review of Research in Open and Distance Learning, 12*(3): 1–18.

Ministry of Education. (2007a). *The New Zealand Curriculum*. Wellington: Learning Media for the Ministry of Education.

Ministry of Education. (2007b). *Teaching as inquiry*. Retrieved from http://nzcurriculum.tki.org.nz/Curriculum-stories/Case-studies/Teachers-as-learners-Inquiry/Teaching-as-inquiry

Ministry of Education. (2008). *Ka Hikitia—Managing for Success: The Māori Education Strategy 2008–2012*. Wellington, N.Z.: Ministry of Education.

Pohl, M., & Dixon, M. (2005). *Lift off to learning in inquiry-based classrooms: By linking thinking and information literacy*. Moorabbin, Victoria, Australia: Hawker Brownlow Education.

Richardson, L., & St. Pierre, E., (2005). Writing: A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 959–978). Thousand Oaks, CA: Sage. Retrieved from http://depthpsychotherapy.pbworks.com/f/Writing+A+Method+of+Inquiry.pdf

Ripp, P. (2014). *Education musings, technology and lessons: My life as a teacher*. Retrieved from http://pernillesripp.com/2014/10/31/6-changes-toward-personalised-learning/

Strozzi-Heckler, R. (2014). The art of somatic coaching. *Human Resources Magazine*. Retrieved from http://www.strozziinstitute.com/resources/articles/learning+to+learn

Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration (BES).* Retrieved from www.educationcounts.govt.nz/publications/series/2515/15341

Xiaodong, L., Schwartz, D., & Bransford, J. (2007). Intercultural adaptive expertise: Explicit and implicit lessons from Dr. Hatano. *Human Development 50*, 65–72. doi: 10.1159/000097686

Biographical notes

Anne-Marie Hunt
anne-marie.hunt@canterbury.ac.nz

Anne-Marie is a lecturer and the regional co-ordinator at the Rotorua University of Canterbury (UC), College of Education Centre. She teaches the Professional Inquiry and Practice courses in Rotorua and in the UC Flexible Learning Option that is available throughout Aotearoa New Zealand. Her research interest areas are in blended e-learning and Māori education.

Hunt, A-M. (2015). Blended online learning in initial teacher education: A professional inquiry into pre-service teachers' inquiry projects. *Journal of Open, Flexible and Distance Learning, 19*(2), [48–60].