

USING MOBILE TECHNOLOGY TO DEVELOP THE PRE-SERVICE TEACHER PRACTICUM

Leanne Cameron
Australian Catholic University

Chris Campbell
University of Queensland

Lynn Sheridan
University of New South Wales
Australia

Abstract

There is a perceived “disconnect” between university theory and the reality of the classroom which has led to criticism of the efficacy of pre-service teacher preparation. Additionally, it is now acknowledged that the practicum experience for pre-service teachers is not fully preparing them for the demands of a 21st century education system. In this paper, the authors revisit the practicum experience and propose that mobile technology, with its ability to provide instant communication and immediate access to resources, could minimise the “disconnect” between theory and the classroom and improve the pre-service teacher practicum experience for all parties involved.

Background

It has been acknowledged for some time that practicum experience for pre-service teachers is not achieving the requirements of a 21st century education system. As the *Australia's teachers: Australia's future* Report (DEST, 2003, p. 142) stated, “it is time to rethink practical experience.” Financial limitations, heavy classroom teacher workloads and a perceived disconnect between university theory and the reality of the classroom has led to dissatisfaction with pre-service teacher preparation (Beck & Kosnik, 2002; Dyson, 2005; Loughran, 2007; Ure, 2009).

The solution proposed by both Ramsey and the Australian Education Union (DEST, 2003) is to develop a more comprehensive practicum that also provides for more time in the classroom. The two major limitations to this solution are finances and a lack of willing and capable supervising teachers: neither of which is likely to change in the short term (Ure, 2009). Therefore, any improvement to

this situation will require an innovative approach to learning and teaching in regard to the pre-service teacher practicum.

Method

The study was designed as an analysis of the experiences of 30 pre-service student secondary teachers in an undergraduate arts/education degree in their final semester of study at a private Australian university located in Sydney, Australia. The survey consisted of seven broad open-ended questions. This paper reports on the section of the survey which dealt with student beliefs around the professional experience. The responses to the questions were captured using an online survey instrument that was distributed at the end of the participants' final academic year. All participants had recently completed their final 10 week school-based professional experience.

Responses to the survey questions were examined using thematic analysis which was informed by theoretical perspectives derived from Crotty's (2003) constructionism theory. Thematic analysis focused on identifiable themes and patterns across the data set collated from the participants' responses rather than within data items (Braun & Clarke 2006). This approach emphasised the context of the text (Riessman, 2002). Reliability and validity of the categories were supported by relevant data responses. Only those themes and patterns relevant to the professional experience component were drawn from the research for this paper.

The assumptions that underpin this analysis are that the participants' views and beliefs about their experiences in their course are based on both socially constructed and interpretative epistemology. Therefore it is recognised that "meaning is constructed by human beings as they engage with the world they are interpreting" (Crotty, 2003, p. 43). This theoretical view places the pre-service teachers as an active participant in the learning process constructing meaning through personal and social experiences (Vygotsky, 1978). With this in mind, it was important to understand how the pre-service teachers constructed and interpreted beliefs of the 'value added' nature of the extended professional experience as they developed understanding as secondary teachers.

Students were encouraged to respond based upon their own experiences and perceptions. This approach allowed them to answer in an open conversational manner and is consistent with the social constructivism research methodology.

Survey Questions

The survey questions this paper draws upon were:

- Can you describe for me what has been the most important aspect of this course in terms of developing you professionally

for your career as a teacher (coursework, professional experiences, etc.)?

- This University is unique in that it has 150 days of professional experience built into its Bachelor of ARTS/Education degree. I am interested in getting an understanding of how effective or not effective this extended professional experience has been in developing your pedagogical and professional skills as a high school teacher.
- Can you comment on the type of scaffolding and support you received for your professional experience placements?

The Practicum

The practicum has an acknowledged central place in pre-service teacher education programs (Ryan, 1996). Practicum provides an opportunity for pre-service teachers to:

- apply knowledge and skills in a practical setting;
 - progressively develop competencies through participation in a range of practical experiences;
 - test their commitment to a career;
 - gain insight into professional practice; and
 - evaluate their progress and identify areas where further personal and professional development is needed.
- (Daresh, 1990)

Although there is reported dissatisfaction with the pre-service teacher practicum (Beck & Kosnik, 2002; DEST, 2003; Dyson, 2005; Loughran, 2007; Ure, 2009), the students truly value the experience. When asked about their practicum, student comments were overwhelmingly positive:

Professional experience was most significant, having real life experience that is not removed from the theory learnt through course work, helped put into practice what works and what doesn't. It also helped with development of personal style of teaching and exposed me to different and diverse teaching situations.

Professional experiences were definitely an important part of becoming a teacher. It was while physically teaching that I learnt the most.

Professional experiences have enabled me to apply the theory i learnt in the coursework to reality. This enabled me to work out what worked and what didn't as an up and coming teacher. The practicums were the most

beneficial because the length of them allowed me to become a real member of the school, therefore enabling the students to become comfortable with me as a teacher and begin to truly test myself.

The experience i gained on all three of my ten week practicums changed the way i approached teaching as I worked through each prac. By the end of my internship i felt i had grown into my full potential as an up and coming teacher.

The professional experiences helped me the most. By the time I started my internship I was very comfortable with being in a school and being responsible for students' learning, which left me open to try new things and learn as much as possible.

Increasing the Effectiveness of the Practicum Experience

Although most pre-service teachers value their practicum experience, many could gain much more from the experience. The opportunity for pre-service teachers to reflect on their classroom experiences in light of their current knowledge and understanding is crucial to an effective practicum experience (Boud, Keogh, & Walker, 1985; Lyons, 2010). They need the time and space to make connections between the theory they have studied and the experiences they have had in practice. The pre-service teachers themselves recognise there is a disconnect between university theory and the reality of the classroom which has led to criticism of the efficacy of pre-service teacher preparation. When surveyed, a number of the pre-service teachers commented on the gap between the theory (provided by the university) and the practicum (provided by the schools):

[I would like] more emphasis on teaching method courses that allow us to bring together our learning in education subjects and our learning.

Teaching methods [instruction by the university] needs to be extended to allow for a more thorough understanding of our KLA and what strategies our colleagues are implementing in their classroom.

Using Mobile Phones on Practicum

It is the immediate exchange of reflections, ideas and materials between pre-service teachers and their peers, mentors and/or university lecturers, regardless of workplace learning locations, that might bridge the gulf between formal classroom-based and informal, experiential workplace learning (Hoekstra et al., 2009; Sharples, 2005). By introducing a culture of collaborative problem solving and exposing pre-service teachers and their mentors to the practice of reciprocal

peer coaching, the school/university partnership could be strengthened and would explicitly illustrate the synergy between theory and practice (Beck & Kosnik, 2005; Dyson, 2005; Ure, 2009; Zwart, Wubbels, Bergen, & Bolhuis, 2009). This process would be most effective if communication between stakeholders was immediate.

Using mobile technologies, communication could be made allowing the pre-service teachers to ask questions, collaborate with others, seek out new knowledge and plan new activities (Sharples, 2005; Zwart et al., 2009). This communication could be in the form of a phone call, text message, an e-mail message or a forum post. In this way, they could actively share their experience, learn about those of their peers, discuss differences, and establish shared meanings. This type of collaborative consultation improves problem solving skills, facilitates understanding and promotes academic achievement (Meyers, 1995) and can be used to directly draw relationships between their theoretical and practical knowledge.

As pre-service teachers are continually on the move during practicum, choosing an appropriate technology that would facilitate the essential role communication plays in learning has the following general requirements:

- highly portable, so that they can be available wherever the pre-service teachers need to learn or communicate;
- unobtrusive, so that the pre-service teachers can describe situations and retrieve knowledge without the technology obtruding on classroom activity;
- available anywhere, anytime any place to enable communication and data exchange with supervisors, experts and peers despite institutional barriers, e.g., school network firewalls and site blocking filters (DEEWR, 2009);
- adaptable to the context of learning and the pre-service teacher's evolving skills and knowledge; and
- easy to use and suited to everyday needs for communication, reference, work and learning.
(adapted from Sharples, 2000)

Students state the appeal of using a mobile phone is its convenience, mobility and portability (Herrington, 2008). For this reason, using phones is deemed preferable to larger mobile technologies (e.g., iPads). A preference for portability (i.e., phone) over screen size (i.e., iPad, tablet) is becoming increasingly reported by regular users (Capobianco, 2010; Shane, 2011; Tofel, 2011; Weintraub, 2010).

Australia has one of the highest rates of mobile phone ownership in the world (DFAT, 2007). In fact there are significantly more mobile services than people, due to a growth in the number of people using two mobile subscriptions — one for personal use and one for business (BuddeComm, 2009). The frequency of usage for calling and texting by both university staff and students suggests that the mobile phone has become largely ubiquitous (Kennedy, Dalgarno, Bennett, Judd, Gray, & Chang, 2008).

The majority of mobile phones currently sold combine the functions of phone, camera and multimedia wireless computer and meet all of the criteria above. Using a mobile phone and an appropriate network plan and software, the pre-service teachers are able to access an information network at their precise moment of need, even when they are physically separated on their practicum (Seppälä & Alamäki, 2003). It can provide them with immediate access to quality curriculum materials to guide lesson planning, examples of exemplary teaching and access to communication with peers and/or supervisors (Herrington, Mantei, Herrington, Olney, & Ferry, 2008).

In a University of Wollongong study with early career teachers (Herrington et al., 2008) one of the benefits of mobile communication was these teachers were relieved of the sense of isolation so often experienced when they are separated from the support structures of their university and their peers. There have been a number of studies that have reported that online communities can provide much needed emotional support and encouragement while diminishing feelings of isolation and helplessness (DeWert, Babsinski, & Jones, 2003; Herrington et al., 2008). Having immediate access to online communication encourages the pre-service teachers to share with and support each other and generally extend the cohort community and program into the practicum environment (Beck & Kosnik, 2002).

Seppälä & Alamäki (2003) found that having access to mobile phones meant pre-service teachers were able to use their waiting moments to conduct educational activities. They wrote notes, uploaded pictures and provided feedback to their peers and/or supervisors. The ability to take digital photos and short videos was regularly used and highly regarded. They changed titles of pictures and wrote messages about what was happening in the photo and shared it for discussion. This helped both the pre-service teachers and their supervisors analyse and reflect on their experience.

Pre-service teachers stay connected with their peers and lecturers by seeking out popular social media sites such as Facebook, YouTube, Twitter and Wikipedia. Moreover, they are being increasingly encouraged to engage in these practices by their university lecturers. However, schools have a fundamental duty of care to their young students, so site blocking is a necessary and key component of every school's overall cyber-safety strategy serving as front-line protection of students, denying them access to illegal and inappropriate Internet sites and content

(DEEWR, 2009). Site blocking is also used as a method to limit download of bandwidth-heavy rich media content for schools with limited bandwidth which also limits what materials the pre-service teachers can access and upload. In this case, a short video of a classroom activity cannot be shared and discussed with their peers or supervisors. These policies are extremely limiting to our pre-service teachers conducting their practicum at these schools and it is something the school systems will need to address in the near future.

Mentorship

However, not all practicum experiences are effective, or even considered beneficial. A regularly reported problem is that of poorly structured and/or poorly supervised experiences (Ryan, 1996). A student quoted by Ehrich, Hansford and Tennent (2004) stated

My mentor never has time; he is always so busy that I feel acutely embarrassed if I need to bother him. (p. 527)

It is perhaps unrealistic to suggest that all supervising teachers will have the time, knowledge and skill in all areas to fulfil all the pre-service teacher's needs. With the introduction of mobile communication, a support team approach is possible. A professional support team can include other mentor teachers from the same school or another school, a school district administrator, a university lecturer or any other interested professional with the desired expertise (Jones, 2009; Kajs, 2002). The team approach can reduce the time commitment of the supervising teacher by sharing the mentoring responsibilities. This also has the advantage of building a network of expertise that could be maintained throughout the pre-service teacher's career, and introduces the concept of online collaboration with peers and mentors, which is likely to be a typical part of a teacher's career in the 21st century.

Introducing a culture of collaborative problem solving and exposing pre-service teachers and their mentors to the practice of reciprocal peer coaching, it is expected will strengthen the school/university partnership and will explicitly illustrate the synergy between theory and practice (Beck & Kosnik, 2005; Dyson, 2005; Ure, 2009; Zwart et al., 2009).

By employing mobile technologies and incorporating mentorship principles into a structured program, the practicum could be designed to be mutually beneficial to both the pre-service teacher (mentee) and the supervising classroom teacher (mentor). For mentees, practicum provides opportunities to develop competencies, skills and knowledge and to improve performance. For mentors, it promotes professional and personal development. For both groups, it can improve overall skills, provide exposure to new ideas and promote an environment of collegiality (Ehrich, 2004).

All stakeholders could be given the opportunity to co-create the practicum experience by developing scaffolded but flexible mentoring guidelines that help all involved understand the practicum experience. With the implementation of mobile technology, this can be a continually iterative process.

The Need for Change

The introduction of an innovative utilisation of technology to improve the practicum has the potential to facilitate the promotion of quality teaching and learning in many disciplines throughout the higher education sector. The *Australia's teachers: Australia's future* Report (DEST, 2003) concluded there was an urgent need for change in how the pre-service teacher practicum is being conducted and it welcomed the development and testing of innovative new approaches. By using an increasingly common mobile technology, we will be developing an innovative new approach to teaching and learning and testing its feasibility.

The mobile technology will enable practicum postings to be made in culturally diverse regional communities that currently have low teacher retention and participation rates, often due to issues of isolation and/or the remote location. This approach has the potential to develop deeper and sustained pre-service teacher, teacher and university engagement in those communities.

Conclusion

In this paper the authors have revisited the pre-service teacher practicum experience — a practice that is now acknowledged as not fully preparing students for the demands of a 21st century education system. The authors have used wide-ranging current research to underpin their proposal that mobile technology, with its ability to provide instant communication and immediate access to resources, could minimise the “disconnect” between theory and the classroom and improve practicum for all parties involved. It has been suggested that by establishing a culture of collaborative problem solving, made possible by the introduction of mobile phones, the school/university partnership could be strengthened and the synergy between theory and practice explicitly illustrated. Additionally, it will allow an exploration of the concept of a mutually beneficial practicum and effective mentorship strategies. It is hoped this paper will serve to facilitate a broader discussion that can begin to explore how mobile technologies can most effectively be used by practicum students out in the field.

References

Australian Learning & Teaching Council. (2008). *Funding available*. Retrieved at <http://www.altc.edu.au/grants-funding-available#competitive-grants>

- Beck, C., & Kosnik, C. (2002). Professors and the practicum: Involvement of university faculty in preservice practicum supervision. *Journal of Teacher Education*, 53(1), 6–19.
- Boud, D., Keogh, R., & Walker, D. (Ed.). (1985). *Reflection: Turning experience into learning*. London: Kogan Page.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101.
- BuddeComm. (2009). *Australia — Mobile Communications — Subscriber Statistics*. Retrieved from <http://www.budde.com.au/Research/Australia-Mobile-Communications-Subscriber-Statistics.html>
- Capobianco, F. (2010). *Is my iPad too big?* Retrieved April 20, 2011, from <http://www.fabcapo.com/2010/10/is-my-ipad-too-big.html>
- Crotty, M. (2003). *The foundations of social research: Meaning and perspectives in the research process*. Australia: Allen & Unwin.
- Department of Education, Employment and Workplace Relations. (2009). *SICTAS: Web 2.0 site blocking in schools*. Education.au Limited. Retrieved from <http://www.educationau.edu.au/jahia/webdav/site/myjahiasite/shared/SICTAS/SICTAS-nsi.pdf>
- Department of Education Science and Training. (2003). *Australia's teachers: Australia's future: Advancing innovation, science, technology and mathematics*. Canberra: AGPS.
- Dareesh, J. C. (1990). Learning by doing: Research on the educational administration practicum. *Journal of Educational Administration*, 28(2), 34–47.
- Department of Foreign Affairs and Trade. (2007). *About Australia: Information and communications technology*. Retrieved from <http://www.dfat.gov.au/facts/ict.html>
- DeWert, M. H., Babinski, L. M., & Jones, B. D. (2003). Safe passages: Providing online support to beginning teachers. *Journal of Teacher Education*, 54(4), 311–320.
- Dyson, M. (2005). Australian teacher education: Although reviewed to the eyeballs is there evidence of significant change and where to now? *Australian Journal of Teacher Education*, 30(1), 37–54.
- Ebby, C. B. (2000). Learning to teach mathematics differently: The interaction between coursework and fieldwork for preservice teachers. *Journal of Mathematics Teacher Education*, 3(1), 69–97.
- Ehrich, L., Hansford, B., & Tennent, L. (2004). Formal mentoring programs in education and other professions: A review of the literature. *Educational Administration Quarterly*, 40(4), 518–540.
- Herrington, A., Herrington, J., Kervin, L., & Ferry, B. (2006). The design of an online community of practice for beginning teachers. *Contemporary Issues in Technology and Teacher Education*, 6(1), 120–132.
- Herrington, A., Herrington, J., & Mantei, J. (2009). Design principles for mobile learning. In J. Herrington, A. Herrington, J. Mantei, I. Olney, & B. Ferry (Eds.), *New technologies, new pedagogies: Mobile learning in higher*

- education* (pp. 129–138). Wollongong: University of Wollongong. Retrieved from <http://ro.uow.edu.au/>
- Herrington, J., Mantei, J., Herrington, A., Olney I., & Ferry, B. (2008). New technologies, new pedagogies: Mobile technologies and new ways of teaching and learning. In *Hello! Where are you in the landscape of educational technology? Proceedings ASCILITE Melbourne 2008*. <http://www.ascilite.org.au/conferences/melbourne08/procs/herrington-j.pdf>
- Hoekstra, A., Korthagen, F., Brekelmans, M., Beijaard, D., & Imants, J. (2009). Experiencing teachers' informal workplace learning and perception of workplace conditions. *Journal of Workplace Learning*, 21(4), 276–298.
- Jones, M. (2009). Supporting the supporters of novice teachers: An analysis of mentors' needs from twelve European countries presented from an English perspective. *Research in Comparative and International Education*, 4(1), 4–21.
- Kajs, L. (2002). Framework for designing a mentoring program for novice teachers. *Mentoring & Tutoring*, 10(1), 57–69.
- Kennedy, G., Dalgarno, B., Bennett, S., Judd, T., Gray, K., & Chang, R. (2008). Immigrants and natives: Investigating differences between staff and students' use of technology. In *Hello! Where are you in the landscape of educational technology? Proceedings ASCILITE Melbourne 2008*. <http://www.ascilite.org.au/conferences/melbourne08/procs/kennedy.pdf>
- Loughran, J. (2007). Teachers as leaders: Building a knowledge base of practice through researching practice. In T. Townsend & R. Bates (Eds.), *Handbook of teacher education: Globalization, standards and professionalism in times of change* (pp. 585–596). Dordrecht, The Netherlands: Springer.
- Lyons, N. (2010). Reflection and reflective inquiry: What future? In N. Lyons (Ed.), *Handbook of reflection and reflective inquiry*. New York: Springer.
- Meyers, J. (1995). A consultation model for school psychological services: Twenty years later. *Journal of Educational and Psychological Consultations*, 6(1), 73–81.
- Phillips, R., Bain, J., McNaught, C., Rice, M., & Tripp, D. (2000). *Handbook for learning centred evaluation for computer facilitated learning projects in higher education*. Retrieved June 2, 2010, from <http://www.tlc.murdoch.edu.au/archive/cutsd99/handbook/handbook.html>
- Reeves, T. C., Herrington, J., & Oliver, R. (2005). Design research: A socially responsible approach to instructional technology research in higher education. *Journal of Computing in Higher Education*, 16(2), 97–116.
- Riessman, C. K. (2002). Narrative analysis. *the qualitative researcher companion* (pp. 217–270). UK: Sage.
- Ryan, N. S., Morse, D. R., & Pascoe, J. (1999). *FieldNote: A handheld information system for the field*. Paper presented at the TeleGeo'99, 1st International Workshop on TeleGeoProcessing, Lyon.
- Seppälä, P., & Alamäki, H. (2003). Mobile learning in teacher training. *Journal of Computer Assisted Learning*, 19(3), 330–335.
- Shane. (2011). *Is this one reason you would ditch your iPad?* Retrieved April 20, 2011, from <http://www.tcgeeks.com/is-ipad-too-big-for-productivity-use/>

- Sharples, M. (2005). Learning as conversation: Transforming education in the mobile age. In *Proceedings of Conference on Seeing, Understanding, Learning in the Mobile Age* (pp. 147–152). Budapest, Hungary.
- Sharples, M. (2000). The design of personal mobile technologies for lifelong learning. *Computers and Education*, 34(3–4), 177–193.
- Tofel, K. C. (2011). *Why I just dumped the iPad (Hint: Size matters)*. Retrieved April 20, 2011, from <http://gigaom.com/mobile/why-i-just-dumped-the-ipad-hint-size-matters/>
- Ure, C. (2009). *Practicum partnerships: Exploring models of practicum organisation in teacher education for a standards-based profession*. Strawberry Hills, NSW: Australian Learning and Teaching Council.
- Vygotsky, L. S. (1978). *Mind in society*. Cambridge: University Press.
- Weintraub, S. (2010, January 28). Hands on with the Apple iPad. *Computerworld Daily Newsletter*. Retrieved from June 3, 2010, from http://www.computerworld.com/s/article/9149892/Hands_on_with_the_Apple_iPad
- Wenger, E. McDermott, R. & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Boston, MA: Harvard Business School Press.
- Zwart, R., Wubbels, T., Bergen, T., & Bolhuis, S. (2009). Which characteristics of a reciprocal peer coaching context affect teacher learning as perceived by teachers and their students? *Journal of Teacher Education*, 60(3), 243–257.