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THE ROLE OF MOBILE TECHNOLOGIES IN PRE-SERVICE FOREIGN LANGUAGE TEACHER EDUCATION

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Abstract

Pre-service teacher education plays a pivotal role in ensuring that future teachers are prepared to integrate technology effectively to their teaching. One way of improving readiness in future teachers is integrating mobile technologies to discipline-specific teacher education courses. This article presents three case studies drawn from exploratory research carried out in a year-long course that used an 'experiential approach' to teacher education. Accordingly, pre-service teachers of foreign languages used iPads to support both learning to teach languages and learning to integrate technology to their teaching. The cases illustrate the complexities of integrating technology to learning to teach. Although situated on a foreign language teacher education context, findings of this article have implications for other sectors as mobile technologies become ubiquitous in classrooms everywhere.

Keywords

iPads; foreign language teacher education; experiential learning

Introduction

The spread of mobile devices has prompted calls for greater integration of technology to everyday teaching and learning across all educational sectors. In New Zealand the government has invested in infrastructure to guarantee connectivity to all schools (Davis, 2011) and has prioritised technology for learning (Ministry of Education, 2014) with a number of initiatives for learners, communities and teachers. One sector that has received less attention in the numerous initiatives is teacher education. If teachers are seen as the drivers of innovations in classrooms, then pre-service teacher education plays a pivotal role in ensuring that future teachers are prepared to integrate technology (including mobile technologies) to their teaching. One way of improving readiness in future teachers is to integrate mobile technologies to discipline-specific teacher education courses (Hubbard, 2013). One such course is the context of the study reported in this article.

This article presents three case studies drawn from exploratory research carried out in a year-long course that used an 'experiential approach' to teacher education (Hoven, 2007) where pre-service teachers of foreign languages used iPads to support both learning to teach languages and learning to integrate technology to their teaching.

Teacher education and the integration of technology to teaching

In an already crowded curriculum, teacher education programmes are juggling to respond to demands on different fronts to prepare future teachers to integrate technology effectively in to their teaching (OECD, 2012). The integration of technology to teaching is a multifaceted and complex undertaking that requires a revised view of the knowledge and the skills required by pre-service teachers. As Warschauer (2011) noted, "[learning to use technology] involves not only the development of teachers' technical skill, but also an evolution of their ideas about teaching and learning" (p. 107). Similarly, Blake (2008) asserted that teacher education should progress from "a computer functional competence (knowing how to use the tools) toward both a critical competence (realizing what the tools are good for) and then, finally, to a rhetorical competence (understanding how these tools will help transform the learning environment)" (p. xv). Parallel to shifts in teacher education models, addressing this range of expectations requires a move away from a purely skills-based model of the

use of technology in teacher education to one where future teachers experience modelling of effective uses and practices in technology use (Hoven, 2007). In addition to modelling, student teachers should be provided with opportunities to reflect individually and collectively on their experiences as learners and as teachers of a particular curricular area (Farrell, 2016; Wright, 2010).

Of particular interest for this article, mobile devices and Web 2.0 technologies have changed the pedagogical landscape of language learning and teaching (Kukulska-Hulme, 2009). According to Kern (2006), technology plays three key roles in foreign language education. First, technology can be used as a tutor where individuals can learn the language independently. Second, technology is a tool to access a myriad of platforms and resources. And thirdly, technology is a medium where learners network with peers and exchange information and artefacts, ultimately producing content and knowledge that may not have been possible otherwise (Pachler, Bachmair, & Cook, 2010; Wright, 2010).

Developing a programme for future teachers of foreign languages that prepares them for a pedagogically sound integration of technology to their emerging language teaching practices is therefore a complex undertaking. Research is needed to document how pre-service teachers deal with these complexities during their teacher education programme. With this need in mind, this article reports on the experiences of three pre-service teachers of foreign languages.

Context

The research presented here is part of a wider project where four teacher educators at a faculty of education investigated the use of mobile technologies in their courses across various curricular areas (Tolosa, Garbett, Heap, & Ovens, 2016). The project was motivated by faculty-wide initiatives to promote the use of mobile technologies including availability of sets of iPads in several classrooms. Data reported in this article were collected from a one-year course for pre-service students of languages. The course is organised in 18 two-hour weekly sessions spread over the year on the weeks that the students are on campus. In the intervening weeks, the students go to schools for supervised practicum placements.

Before the availability of iPads, the course included some technology, mainly used by the lecturer, with isolated instances of use of technology tools by the student teachers. With the availability of iPad sets in the classrooms, the course was re-designed to include learning with the mobile devices. The iPads were used during all class sessions for different tasks from taking notes and accessing the Learning Management System to participating in interactive and collaborative tasks as well as creating teaching resources. This format placed the student teachers in the role of learners as they experienced the use of the mobile technologies to learn to teach languages.

Methodology

Research questions

Two over-arching research questions were posed for the wider project: How does the use of mobile technologies enhance teaching and learning? And how do student teachers use mobile technologies to provide feedback on their learning? This paper addresses the first over-arching question and specifically aims to document how student teachers deal with the complexities of a pedagogically sound integration of technology to the teaching of languages.

Participants

Following the university's ethics protocols, all the students from the *Teaching Languages in Schools* course (*n*= 26) were invited to participate in the study. Twenty-two students volunteered to participate in the study; from those, five volunteered to be interviewed at the end of the course. For the purposes of this article, three cases were selected. The purposive selection of the three pre-service teachers was done based on the contrasting descriptions of their learning experience during the end of the year interviews.

Data collected

Three different sets of data were collected for the wider project. One set of data was collected anonymously: a technology-use questionnaire and an end-of-course evaluation yielding both quantitative and qualitative data. A second set of non-anonymous data included students' reflections, a critical-incident questionnaire (Brookfield, 1995), relevant classwork and an assessment task where students designed three technology resources. The last set of data consisted of semi-structured interviews conducted at the end of the course with five volunteer participants. From all the data collected during the year, the data analysed for this paper consisted of feedback provided in emails to the lecturer, responses to the Critical Incident Questionnaire (a structured reflective piece to collect feedback from the students in their learning experience), and semi-structured interviews at the end of the semester. After a brief section that describes the three pre-service teachers, findings are organised chronologically at three different moments during the academic year. Given space limitations, the excerpts from the participants' data consist only of explicit mention of the iPads.

5. Findings

Description of the pre-service teachers (all names are pseudonyms)

Emma was a pre-service teacher of French who felt quite comfortable with technology before starting the programme. She owned a laptop and a smartphone but had no experience with tablets. Julie, a native speaker of French, had immigrated to New Zealand four years before entering the teaching programme. She was interested in technology although did not describe herself as a confident user. She worked mostly on a desktop at home and had a smartphone. Before entering the programme, John had lived two years in China where he learned Mandarin Chinese. He decided to be a teacher of Chinese and described his knowledge of technology as beginner. He used desktops at home and the library and had a basic mobile phone.

Beginning of the year

Since most of the pre-service teachers in the class were new to using iPads, the first part of the course focused on developing the skills to use the technology, and the initial tasks were starting to put the preservice teachers in the learners' place so that they experienced some of the pedagogical uses of the technology. For example, in one of the initial tasks, the student teachers were asked to create a Padlet wall where they introduced themselves in the target language both in writing and with a short video. They also practised their language skills in popular platforms for language tutorials and games (e.g., Quia). After each of these tasks, the class would reflect how each tool can be used in their own teaching and what language content or language skill can be taught with those tools. Comments from the three participants indicate that they are starting to see the connections between the theoretical aspect of the course and their future practice.

After five two-hour sessions the pre-service teachers were asked to email the lecturer with formative feedback about the course, and in particular about the use of the iPads. What follows are excerpts of the emails from the three participants, in particular about the use of the iPads and teaching (breaks in the teachers' text are signalled with …).

> *Emma:* I enjoyed working with the iPads obviously and have found useful learning about AirPlay and some of the apps for languages … I like that you take examples of what we do [with the iPads] and relate it to real language classes.

> *Julie:* I liked how we had access to iPads and learned how we could do voice and video recording … I think it's important to progress forward with technology since the majority of the students we will be working with will be quite proficient, if not more so than ourselves!

> *John:* The use of the iPads was at first a bit scary for me because I have not yet familiarised myself with the latest technology but I am glad I am up-skilling because

schools may be using them … The activities, such as the cooperative learning tasks, are quite effective to see where I am with my Chinese abilities.

As seen in the comments above, at the initial stage of the course the three pre-service teachers seemed to be in discovery mode, recognising the value of learning to use the iPads in preparation for their future jobs in schools and the possible mismatches between what they know and what their students in schools may know about technology. Both Emma and Julie enjoyed working with the iPads while John seemed apprehensive yet willing to learn.

Mid-year

Between the two practicum placements there were four sessions where the student teachers worked with the iPads extensively, moving to using the technology as a tool and as a medium (Kern, 2006) in their teaching. This included creating resources for their lessons, which they tested on each other alternating between being students and being teachers, giving feedback to each other as they would ask the students to do it in platforms such as Educreations, working in collaborative tasks and communicating with their language-specific tutors. One of the collaborative tasks aimed to support the student teachers' understanding of the challenges to intercultural language teaching. In groups per language, the student teachers had to post an image that represented a cultural stereotype in a shared space (Voicethread) and explain how they would use it pedagogically. Both the comments on Voicetheread to the selection of the image and the discussion that followed generated thoughtful reflections that would not have been possible without the experience of feeling like students while acting as teachers.

Before going to their second practicum, the pre-service teachers were asked to complete a Critical Incident Questionnaire as a way of reflecting on their learning and providing feedback to the lecturer. When asked about the moment when they were most engaged, John said, "When we were doing things that I can use in my teaching like the resources we created with the iPads." Emma liked the interaction and collaborative work with her peers: "We had so much fun doing the videos, working in the GoogleDocs and playing around with the apps." Julie liked the activities with the iPads, in particular because they brought an element of surprise to the lectures. As to when they were most distanced (question 2), John preferred the practical activities (mostly done with the iPads) whereas both Emma and Julie criticised their peers' lack of preparedness with the technical aspects of the apps. Finally, the students commented on what had surprised them about the course. John was surprised by the emphasis on technology and admitted, "I thought I was coming to learn how to teach Chinese. But the use of the iPads made me realise there's more to teaching than just knowing the language and the theory to teach it." Emma seemed surprised with how practical the course was. Julie's comment alludes to the experiential format: "That we were expected to learn to be teachers as we are expected to teach our future students. All the learning with the iPads was training us to see how we would do it with our students."

Answers to the questionnaire from the three participants indicate that midway through their programme they were positive about working with their peers, having practical sessions with the iPads and making stronger connections between learning to teach and learning to use technology to teach. On the other hand, there was evidence of their experiences being different with each of them realising how their own expectations were being met (or not) in the course. Answers to the last question were perhaps the most revealing of the fact that each pre-service teacher follows a different path in learning to teach and in seeing the place of technology in their teaching. John's answer indicates his realisation that learning to teach involves a combination of a number of competencies developed in different modes in the programme. Julie's comment signals her acknowledgement of the experiential approach being followed where what was done in the class was placing the group of student teachers as learners in terms of the use of technology and then they were expected to reflect on how they would use a tool or platform in their own teaching.

End of the year

At the end of the year when the grades for the course were released, interviews with five of the 22 volunteer pre-service teachers took place. From the five interviewees, the three pre-service teachers

were selected for this article because their answers to the question "Describe your experience this year using mobile technologies to learn to teach languages" illustrated different trajectories in the way they learned to teach languages with mobile technologies.

> *Julie:* This year has definitely been a roller-coaster. There were times when I felt very confident and other times totally lost. Having to learn to use the iPads was fun and will be valuable but was also frustrating. Each app has some particular things that you have to learn and we didn't have time to learn them properly.

> *John:* I'd describe my experience this year as climbing a mountain. You realise that knowing a language is really nothing compared with everything that you need to become a teacher. The last assignment felt like a breath of fresh air. Putting together everything we had learned to do [with] the three ICT resources was a great sense of accomplishment.

> *Emma:* It's such a cliché, but for me the year was a journey. I thoroughly enjoyed it despite some bumps. I'm an A to Z person so was thankful that there was clarity on what we had to do and how to get there. We learned by doing. It was great. I have to say that using the iPads was an unexpected highlight and I can't wait to use everything in my teaching next year.

The interviews conducted at the end of an intense year for the pre-service teachers indicate three different experiences. Each teacher used a different image (roller-coaster, climbing a mountain, journey) to describe how they summed up their experience during the year using the iPads. The three different trajectories were indicative of the competing demands in pre-service teachers who in a year need to develop competencies in a number of domains, making these journeys difficult to synthesise.

Conclusion

The structure of the course used for this study allowed the pre-service teachers to learn how to use mobile technologies within their specific curricular area. This 'experiential' approach of learning by doing (Hoven, 2007) put the pre-service teachers in the role of learners who experienced learning *with* the technology *about* technology, as well as about foreign language teaching. This allowed them to go beyond awareness of what they can do with the mobile devices to identifying how to best use them for their teaching. Excerpts from data collected by the three selected preservice teachers illustrated how their ideas about teaching and learning evolved (Warschauer, 2011) albeit differently for each of them. Their initial concern about technical aspects gave way to understanding how the technology could be used for teaching. The fact that the format of the course promoted reflection on their contextualised experiences in their curricular area (Farrell, 2016) meant that the integration of technology to language teaching was meaningful and situated.

As the year progressed, the uses of the iPads moved from isolated skills to sites of communication and collaboration (Kern, 2006). The pre-service teachers worked together with the iPads and learned from each other while they made individual connections between what they were doing as learners and what they would eventually do as teachers (Hubbard, 2013). As future teachers and users of different technologies for teaching, including mobile technologies, the participants in this study also illustrate the different positioning of teachers towards the integration of technology. Some teachers are enthusiastic about mobile technologies and embrace the opportunity to engage with new pedagogical possibilities. In contrast, other teachers are often frustrated, even daunted by the demands of new technologies to their practices and to them as learners and teachers. The last interviews in the present study provided a useful synthesis of the range of experiences of those new to mobile technologies for teaching. On one hand, teachers need more time to learn about the new technology (iPads in this case), worry about the number of new skills required when integrating mobile technologies to their practices, and often describe their learning to use the new devices as 'bumpy', alluding to unevenness and obstacles in the process. On the other hand, despite some of the limitations and new requirements often associated with innovations, some teachers find mobile technologies as a valuable opportunity for a pedagogy where all learn by doing and by reflecting on what is being done.

While mobile technologies will certainly continue to develop and change, teacher educators need to continue developing flexible and adaptive pedagogies to suit their learning environments and the demands of the education system. This study provided illustrations of the way three future teachers

developed and adapted to using mobile technologies as they were learning to teach foreign languages. Teacher education is in a privileged position to enact the aspirations of the New Zealand educational system by ensuring that future generations of teachers develop effective pedagogical practices that will, in turn, meet the needs of their future learners.

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