Premier’s Teachers Mutual Bank New and Emerging Technologies Scholarship

Exploring iPad use to improve literacy among young Aboriginal and Torres Strait Islander students

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As an infants teacher at Lightning Ridge Central School, an isolated, low socio-economic school with a high Aboriginal student population, it became clear to me that more needs to be done to close the gap in education between Aboriginal and non-Aboriginal students. The students I taught were disadvantaged not only by remoteness but also by their low economic backgrounds. iPad technology was not available in their homes, nor were they being taught how they could use this technology for real-world applications. I was concerned that we were on the wrong side of the digital divide and that my students were being left behind the rest of Australia.

Therefore, the goal of my study tour was to examine and compare the use of iPads in Australian and Canadian schools to engage indigenous students, and to observe pedagogical strategies to use this technology in a culturally appropriate manner to improve literacy outcomes for Aboriginal and Torres Strait Islander students in the early childhood years. Firstly, I wanted to learn how iPads are used effectively in schools to promote engagement and improved literacy outcomes, then how we can use this knowledge to make iPad technology relevant to Aboriginal cultures to engage these students in authentic learning experiences.

My Learning Adventure and Key Findings

*New South Wales*

**Sydney School Visits via Dubbo**

To begin my journey I met with our school’s literacy and numeracy trainer, Rebecca Hutchings, at the Department of Education and Communities regional office in Dubbo. Rebecca provides L3 training (Language, Learning and Literacy) and has a Masters degree in Aboriginal education. As an L3 trainer she has observed teachers in a variety of school settings and had a number of suggestions for how iPads can be incorporated into literacy centres to support reading acquisition. One of the big messages I took from Rebecca was that you can’t learn Standard Australian English until you understand your home language first – and iPads can be a revolutionary tool in helping kids to understand their home talk by providing them with opportunities to record themselves, listen to the ways they speak and rehearse privately by creating videos of themselves.

During my time in Sydney I toured Turramurra North Primary School and the Sydney Centre for Innovation in Learning (SCIL) at Northern Beaches Christian School. Both schools are leading the way with world-class 1:1 iPad learning spaces that have been created to facilitate project-based learning. Both principals talked about the ways in which their learning environments needed to change to support the effective use of iPads and promote the 21st century learning skills such as communication and collaboration. Paul Taylor, principal of Turramurra North, has himself received two Premier’s Teaching Scholarships with which he researched how to best lead the professional development of teachers to implement ICT use in the curriculum. He has implemented the knowledge and skills acquired through his study tours to create a world-class teaching and learning environment. I learnt about two very important models during these school visits that must underpin technology use in schools: the SAMR model (Substitution, Augmentation, Modification and Redefinition) and the TPACK model (Technological, Pedagogical and Content Knowledge).

**Professional Learning Workshops and Seminars**

One of the highlights of my study tour was having a day long private workshop with Sydney based technology researcher Dr Kristy Goodwin from Every Chance to Learn. Dr Goodwin conducts independent research to provide evidence-based information and advice about how technology can be purposefully designed to enhance young children’s learning and development. According to Dr Goodwin education apps that are available for iPad and tablet devices fit into three categories, instructive, manipulable and constructive. Instructive apps are content receiving for children based on rote learning or drill and skill functions. Manipulable apps give the child some structure but also allows for some experimentation. Constructive apps allow for content creation. Essentially, instructive apps are a digital replica of Blackline Masters, and although fun, they provide low level thinking for the user in a passive learning environment. When selecting or creating apps it is important for educators to look for manipulable or constructive education apps to ensure students are given an open-ended learning experience that requires a high cognitive investment with minimal extrinsic rewards.

The second professional workshop I attended in Sydney was held at the Macquarie ICT Innovation Centre (MacICT), and was all about capturing children’s stories in multimodal forms on iPad devices. Play is often considered the foundation of literacy development by early childhood educators as it allows children to express themselves and what they are thinking. Although no direct Aboriginal perspectives were included in the course I can see how the teaching strategies I learnt can be applied when focusing on local Aboriginal perspectives. By capturing local Aboriginal stories such as Dreaming stories in multimodal texts, students will be able to engage with much more than just the words of the stories. For example, students could use iPads to capture photos of important places, make videos of elders having a yarn and type the words of their stories to create a rich text that can be produced for an authentic real-world audience.

The final workshop that I attended in Sydney was The App Guide to Language and Early Literacy presented by Speech Pathologist Bronwyn Sutton. The core focus of this workshop was to evaluate education apps that can support the teaching of literacy components such as vocabulary, grammar, sentence conventions, comprehension, phonics and spelling. She provided a different lens with which to evaluate apps than Dr Goodwin, but combining their perspectives makes for effective app selection. One of the best resources I gained from this workshop was a rubric for evaluating app effectiveness. I like the concept of this to support teachers, and was wondering if I might be able to adapt a rubric to incorporate Aboriginal Education Pedagogy and perspectives for app selection.

*Melbourne, Victoria*

**iPads for Learning Pilot Program**

The Victorian Department of Education and Training piloted the iPads for Learning trial between 2010 and 2011, with about a dozen schools in various contexts participating. During my time in Victoria I met with Brooke McNamara, Senior Project Officer of the Digital Learning branch, to talk about the pilot and its findings. Although the project was not a rigorous study of the impact of iPads on student learning, a number of valuable lessons were learnt:

* + iPads are just are device, a teaching tool. Nothing can replace quality teaching.
	+ How an iPad is used in lessons by a teacher determines the effectiveness and engagement from students.
	+ 90 per cent of students reported that learning was more fun with iPads, but the most significant improvements in learning were noticed in infants/primary school-aged students compared to secondary-aged students.

This was a good starting point for the Melbourne component of my study tour, as the next stop was meeting with Helen Otway, principal of St Albans Heights Primary School. Helen was previously the principal of Debney Meadows Primary School, one of the schools selected to be part of the iPads for Learning pilot program. This was particularly useful because Debney Meadows paralleled my current school in a number of ways, being situated in a very low socio-economic area and a large population of students being from backgrounds where English is an additional language or dialect (EALD). Helen said she was so passionate about technology use for disadvantaged students (such as those from refugee, EALD, Aboriginal or low-socioeconomic backgrounds) because she feels it is the responsibility of schools to ensure none of our students are left behind in the current, fast-paced 21st century context.

School Visits and Observations

Whilst in Melbourne, I visited two schools (St Albans Heights and Warringa Park) to view their iPad programs and observe how they are used in daily practice in the Prep (Kindergarten) and Year 1/2 classrooms. I was privileged by total coincidence to observe a lesson that I have delivered before, implemented by teachers and enhanced using iPad technology. Along with seeing the iPad as learning tool for students, I saw the iPad as a tool to help improve teaching. I saw the teachers use their iPads to receive work samples from students via AirDrop and Showbie, assess students at the point of learning and give direct and instantaneous feedback back to students. Teachers used these iPad functions to assess their teaching practices, collect data and create digital portfolios of students, all of which was completed in an efficient manner that allowed them to target the individual needs of students in subsequent lessons and activities.

Enrolments at both schools were quite varied, including students who are Aboriginal as well as students with EALD backgrounds and students with mild and moderate learning disabilities. I saw how, despite this diversity of students, iPad devices brought some equality back in the classrooms by allowing all students to demonstrate their learning in different ways based on their abilities. If a child couldn’t write about the topic – they could video themselves giving an explanation, but in the end, all students were able to produce something of quality. The iPad allowed the students to do this in ways that suited both their learning needs and their interests, whether it be typing, drawing or making a model (then taking a photo and a video explanation), doing a speech or making a multimodal text to name a few examples.

**Current Research in Melbourne**

Whilst in Melbourne I met with two prominent education researchers who have spent the last few years researching the educational benefits of iPad technology to improve literacy outcomes. I met with Dr Eva Dakitch, La Trobe University, and Caja Gilbert (research assistant to Nicola Yelland, director of research at the education college), Victoria University. Thus far, the work by Dakitch and Yelland is the only formal Australian research I have found that focuses specifically on how iPads can be used to improve literacy outcomes for Aboriginal students. One common theme of both conversations was the difficulty they both had in implementing their research. Dakitch stated that her biggest hurdle was the lack of community consultation when implementing her research and how significantly that affected her ability to collect data. Caja also commented that to pass a research proposal through university ethics boards is relatively easy for research that involves non-Aboriginal students, but becomes very difficult when research involves Aboriginal students. Hence, many researchers find it too difficult and avoid specifically researching Aboriginal students. Two resounding messages I have taken from these meetings are:

* + The success of an iPad program in a school is dependent on the home–school relationships and community consultation. If parents and caregivers are not part of the process, then it is unlikely they will provide home support.
	+ More research is required to determine whether iPads are an effective tool to support the learning of Aboriginal students. This can be done at an informal school level with programs that are implemented consistently by teachers and data tracked with school systems such as the literacy continuum.

*Chicago, USA*

In Chicago I met with Kristin Ziemke, a classroom teacher and co-author of the text *Connecting Comprehension and Technology*. As fellow Grade 1 teachers, we shared many stories about our classrooms and the contexts of our teaching (she inner-city Chicago, me outback NSW). Kristin specialises in using iPad technology and apps to support reading comprehension of infants aged students. Along with some of the ways in which she uses apps, Kristin shared some of the practical management tips of iPads in the classroom setting. Many of the apps that Kristin uses correlated with the constructive apps that Dr Goodwin talked about in her workshop.

I also attend a formal professional workshop help by the Bureau of Education and Research called Teaching Kids to Read, Read, Read using outstanding iPad Apps and Technology Resources. The beneficial ideas that came from this course were how to incorporating iPad apps in lessons and activities to effectively extend beyond simply reading text. The focus of this course was a good reminder about the importance of ‘story’ in the classroom and how we must adapt our practice now that story is not exclusively available through print mediums any longer.

*Toronto and Vancouver, Canada*

**Dr Pamela Palmater**

Whilst visiting the Aboriginal Education Centre in Toronto I was able to attend a speaker series they were hosting about the current state of First Nations relationships in Canada. This insightful session was a big eye opener for me to the horrible history that Canadian First Nations have endured and the lasting impacts of this on education. I could see many similarities in regards to education between the histories and its consequences for Aborigines in Australia and Canada. One of the key issues mentioned was the lack of funding for Aboriginal education, an estimated $3.3 billion deficit across Canada. Some of the messages that resonated with me were:

* + There cannot be true reconciliation between Aboriginal and non-Aboriginal people until all the history is commonly known and taught across the nation as an accurate history.
	+ Aboriginal people need allies, not saviours. Any efforts to improve Aboriginal education outcomes must be done in consultation with Aboriginal people, empowering them to lead the change with appropriate support.

**Current Research in Canada**

At the education libraries of the University of Ontario, and the University of British Columbia I investigated research articles and journals about Aboriginal/First Nations education in Canada. I wanted to see if more research had been conducted there than in Australia about using iPads to support indigenous education. I didn’t find anything specifically relating to iPads, but I found some interesting research comparing the similarities between traditional ways of Aboriginal learning and 21st Century learning principles. One of the harmonies I noticed was that the 21st century education movement promotes learning with a contextualised, real-world approach, using resources (which can be technology) that are relevant for current society. This parallels Aboriginal learning principles that promote relevant contextual knowledge delivered in holistic ways. Aboriginal education is all about showing connections, and the 21st century education movement also suggest that rather than teaching discrete pieces of information, we need to present learning as a collaborative, creative and problem-solving process.

**Aboriginal Education Principals**

In Vancouver, I met with District 44’s (North Vancouver) Aboriginal Education Principal, Brad Baker. He oversees how Aboriginal education is delivered across the district and advises schools in implementing the state’s Aboriginal Education Agreement. Brad is a former classroom teacher, and his parents were part of the residential school scheme that was enforced on Aboriginal people, much like the mission schools were in Australia. In his view, Aboriginal Aboriginal stories need to be shared, and he is happy for an on-Aboriginal teacher to share Aboriginal stories once they have asked for permission from the local community. Teachers need to become more comfortable with asking the Aboriginal community about their stories and histories in order to cr3eate an authentic learning experience.

**Aboriginal Literacy K–12 Symposium**

This professional learning day was held in the beautiful Long House (First Nations House of Learning) at the University of British Columbia. The day was centred on ways literacy learning can be enhanced for Aboriginal students by better incorporating Aboriginal perspectives, content and pedagogies, as well as considering strategies and goals for improving literacy outcomes for Aboriginal learners. The highlights of the day were listening to a Squamish chief deliver oral stories about his people and culture and working with fellow teachers to plan ways to incorporate Aboriginal literature into their teaching and learning programs. During the planning time I discussed with teachers opportunities to incorporate iPad technology with the Aboriginal literature and we came up with the following ideas:

* + recording the oral storytellings of chiefs and elders, stories that are complex with circular narrative patterns and often have stories within stories. These recordings can be viewed more than once, allowing students to delve more deeply into the stories’ deeper meanings.
	+ using apps to retell a story and create a multimodal text in which text, voice, images or even video are incorporated to make a modern retelling of a traditional story
	+ responding to stories and showing text-to-world or text to self-connections with apps.

Conclusions

Throughout my study tour I tried to weave together a number of different learning aspects (Aboriginal education, literacy education and 21st Century Learning with iPad devices) to create a better picture of how best to support literacy outcomes for Aboriginal students in ways that are both culturally appropriate and relevant to the current learning context. This is a relatively new concept and little formal research has been conducted so far; however, from my learning experiences and observations, I believe that:

* + iPads can be used to support students’ acquisition of Standard Australian English as it provides them with opportunities to rehearse, record and play back students speaking or reading.
	+ The SAMR and T-PACK models must underpin all technology use within schools.
	+ App selection is a crucial part of success with iPads when apps are of high quality but also link with learning needs of Aboriginal students. I recommend that a rubric be created that links app selection rubrics with Aboriginal Pedagogy frameworks such as the 8 Ways model from Western NSW to support teachers in selecting apps
	+ iPads provide a more equitable learning environment for students, as all students, regardless of ability, are better able to produce work samples that provide evidence about their knowledge and understanding of topics. This in turn fosters a more engaging learning environment because it enables the capacities of all students.
	+ It is essential that our most disadvantaged students be exposed to iPad technology and learn how to use these devices in authentic contexts to prepare them for success in the current society.
	+ We can use iPads to capture stories and create multimodal texts that both enhance students’ literacy skills and cultural knowledge.
	+ Constructive apps provide students with opportunities to express themselves, their histories and culture and to share these with real-world audiences to create authentic and engaging learning experiences.

Ultimately, the success of iPad use is determined by the teacher and the ways in which they are embedded as a learning tool in the classroom. It is essential that we remember that the curriculum comes first, and then determine how iPads can be used to enhance the learning experience for students. In this process, teachers must consult local Aboriginal communities to ensure they have permission to use their stories and to ensure Aboriginal perspectives incorporated are a true representation of the histories and stories of the local people.

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