Skilling Up
Improving educational opportunities for Aboriginal Education Workers through technology-based pedagogy

Final report 2016

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The *Skilling Up* Project team would like to acknowledge the many Aboriginal lands that we have travelled through during the course of the *Skilling Up* project.

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The project team would also like to acknowledge that this project has been penned on *Nyungar Boodjar*.

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Elizabeth Jackson-Barrett  
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List of acronyms used

ACARA – Australian Curriculum, Assessment and Reporting Authority
AEWs – Aboriginal Education Workers
AIEOs – Aboriginal Islander Education Officers
AITSL – Australian Institute for Teaching and School Leadership
APP – Application
AS – Advanced Standing
ATAs – Aboriginal Teaching Assistants
BEd – Bachelor of Education
COAG – Council of Australian Government
DBR – Design-Based Research
EAs- Education Assistants
EOI - Expression of Interest
F2F – Face to Face
ICT – Information and Communications Technology
KEWs– Koori Education Workers
LMS – Learning Management System
LOTE – Languages Other than English
NAPLAN – National Assessment Program – Literacy and Numeracy
NBN – National Broadband network
RPL – Recognised Prior Learning
PD – Professional Development
1:1 – One to one
1.1 Executive summary

The *Skilling Up* Project endeavoured to take an innovative approach to working alongside and with Aboriginal Education Workers (AEWs), not only in the context of their individual roles within schools, but also in relation to developing the technological skills of each of the participants involved in the *Skilling Up* Project.

The aim of the project was to develop an innovative approach to up-skilling Aboriginal Education Workers (AEWs) using iPad technology, providing information on pathways to further study, and educating pre-service and in-service teachers about AEWs’ critical role in classrooms today.

It was in some ways an ambitious project, however, perhaps in the context of Aboriginal education one which was long overdue. The project developed a professional development program and workshops for participants in three regional project hubs – Kimberley, Gascoyne and Perth Metropolitan area.

The project focused on using technologies for research and development in three key areas encapsulated by the themes of *Enabling skills, Pathways in higher education* and *Understanding of AEW roles* (particularly for pre-service teachers). Specifically the project aimed to complete the following across the three areas:

- Research and report on the current roles of AEWs and potential pathways to Higher Education through technology projects
- Create and implement a professional learning program for AEWs and workshop resources
- Design ePortfolio specification and procedures for AEWs
- Design unit/course curriculum
- Create a project website of exemplars, strategy descriptions and digital stories
- Design a 2-week professional development (PD) module
- Create a framework of pedagogical design principles

The following overarching questions framed and guided the *Skilling Up* Project:

- What are the potential educational roles for AEWs that are enabled by mobile and e-learning ICTs?
- What are appropriate strategies for professional learning? (AEWs and pre- and in-service teachers)
- What pedagogical strategies facilitate the use of e-learning and mobile learning devices in Indigenous primary school settings?
- What pedagogical principles can guide the use of mobile technology to empower AEWs?

The initial starting point for the project was to establish a reference group consisting of eminent people from across: the three educational sectors involved in the project; Indigenous teachers working in consultancy and TAFE sectors; and Indigenous academics from across Australia. A literature review was also conducted on the roles of AEWs across...
Australia and the use of ICTs in Indigenous communities, producing an EndNote library and annotated bibliography which was used to produce a detailed report paper.

A survey was developed, which was sent to all schools with Aboriginal Education Workers (AEWs) across the three educational sectors in Western Australia (Department of Education and Training, Catholic Education and Australia Independent Schools of Western Australia). Based on the survey responses, schools eager to be involved in the project were selected. Interestingly, the regional project hubs were self-selected by principals’ and AEWs’ willingness to be involved in the project. Overall, 10 schools and 32 participants were involved in the Skilling Up Project.

During the project, AEWs were required to complete three tasks overall: the creation of a website to be used as an ePortfolio; a digital story; and the selection and use of teaching applications (apps) for use with individual or small groups of students. The team created a curriculum unit guide *Learning new teaching and learning skills with iPads*, which is the equivalent of a first year core unit in educational technology at university. The completion of unit tasks successfully tapped into the potential of AEWs to provide a key supporting role for teachers through enhanced technological capability. This was done through a collaborative program in mobile learning where AEWs develop their competence in new educational technologies to provide a highly valuable role in modern classrooms, and subsequently to enable pathways into teaching degrees. All participants in the Skilling Up project can apply for Recognised Prior Learning (RPL) for this unit, should they choose to enrol at university.

Drawn from the many conversations with the participants, the team also explored the university pathways into teaching degrees that acknowledged and recognised the vast array of experiences AEWs bring with them to their teaching degrees. AEWs’ websites (developed in the first task) have usefully served as a repository for their workplace achievements, and comprises evidence that demonstrates their professional knowledge in meeting the needs of students within their own contexts. We are now exploring how this evidence can be mapped against the Australian Institute for Teaching and School Leadership (AITSL) so that Recognised Prior Learning (RPL) can be awarded in a fair and reasonable fashion without compromising the structure of the degrees or the invaluable expertise of the AEWs themselves.

Based on the consideration of findings, and understandings gained through the Skilling Up project, recommendations include:

- Further research and development is needed to investigate pedagogically and culturally appropriate ways to provide educational and career opportunities for AEWs in their own communities, and to open up pathways and opportunities to higher education beyond those that currently exist. Such pathways should extend to recognising the important and possibly under-valued skills of this group. Development of enrolment processes through internship-styled teaching degrees within the schools to which AEWs are currently employed is also worthy of exploring. Such action may alleviate the need for block release, family anguish, and teaching relief needs.
- Fast-changing technology means that it can be difficult for educators, including AEWs, to remain current and feel confident in using them in their mentoring and advisory roles.
roles. More technology-based professional development (PD), and access to devices and technologies, together with reliable internet access and wifi where possible, would strengthen AEWs contribution to this important 21st century area of knowledge.

- Embed “understanding the role of AEWs” or “working with AEWs” in all pre-service teacher, in-service teacher and school leader professional development. The literature review highlighted that there was a gap in the knowledge of teachers and school leaders in the current and potential role of AEWs in schools and communities. While there were many examples of positive and innovative practices where AEWs play an integral and equal part in schools, many other examples highlighted misunderstandings and confusion over their roles.

- In consultation with AEWs review their roles, working conditions and status in schools. Some cultural attitudes in some schools, combined with low wages and insecure employment conditions add to the often lower status of AEWs in school communities. These conditions serve to perpetuate the gap between Indigenous communities and the wider Australian community and undermine the role of AEWs as Cultural Bridges, Cultural Knowledge Workers and Role Models.

Undertakings such as the Skilling Up project help to provide deeper and more meaningful insights into educational practice, and have the potential to ameliorate considerably the gap that exists between Indigenous and non-Indigenous students in education. However, such change requires policy development and action. The basis for such action exists, such as the newly developed WA Aboriginal Cultural Framework — AEWs (where possible) should play a contributing role in the delivery to assist in achieving these standards. The widely used and respected AITSL standards could also be reviewed to ensure such cultural change is front and centre in teachers’ roles and their endeavours to make a difference in classrooms and communities.
2.1 Project rationale and context

The ‘Education Revolution’ has seen sweeping changes occur across Australia (Garrett, 2011). These changes have included the introduction of a new mandated Australian Curriculum (ACARA), national standardised testing (NAPLAN), professional standards for Australian teachers and national accreditation for Initial Teacher Education providers (AITSL). These initiatives provided the context for the rationale of this project, principally because the National Standards requires that all educators across Australia engage with Aboriginal Australia in significant ways—firstly by directing that all educators teach Aboriginal content and perspectives throughout the Curriculum; and secondly by implementing standards that require both pre-service and in-service teachers to demonstrate their broad knowledge and respect of Aboriginal Australia so that they have the capacity and resolve for further Reconciliation between Indigenous and non-Indigenous Australia. Further, this project is consistent with the recommendations of the review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander People Final Report (Behrendt, L., Larkin, S., Griew, R., & Kelly, P., 2012).

It is within this educational context, that we argue that the interface of Aboriginal education is on the cusp of its own revolution. It is a revolution that was initiated four decades ago, by Aboriginal educators who, through their resilience, have fought long and hard to address issues of equity and opportunity within education for Aboriginal students.

The ‘closing the gap’ campaign has encapsulated many of these battles. Initially, Tom Calma, the Aboriginal and Torres Strait Islander Social Justice Commissioner, focused the ‘closing the gap’ campaign on health initiatives, referring principally to the life expectancy gap between Indigenous and non-Indigenous Australians. The campaign was soon extended to education. The Council of Australian Government (COAG) was the vehicle in which ‘close the gap’ changes in education for Aboriginal students were to be driven (COAG, 2008). Through the campaign, many school initiatives were introduced, such as early childhood access and participation; school readiness; school attendance and retention; school completion; early learning programs; parenting in the early years; and strategies to improve employment (Closing the Gap, 2013). Significantly, among these initiatives the teacher and school leader quality and sustainability initiative highlights that: “Schools that employ and value Indigenous staff provide ‘ready’ links between school, families and communities which can enhance the transition to school for Indigenous children” (Mulford, 2011, p. 2).

It is our belief that Aboriginal Education Workers (AEWs) should be recognised as key cultural brokers in closing the gap in education for Aboriginal students and bringing forward reconciliation. As eminent Aboriginal educator Chris Sarra wrote in his introduction to the Educator’s Forum:

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1 The terms Indigenous and Aboriginal are used interchangeably throughout this document to refer collectively to the First Australians as a matter of respect and to evoke the right to self-determine. Importantly, this interchangeability is also indicative of the constant change of language instigated by successive Australian governments.

2 The term Aboriginal Education Workers is used here to refer to Indigenous support workers/officers in schools, except when a specific term is used within the source. We acknowledge that there are a variety of terms used across Australia including Australian Indigenous Education Officers (AIEOs), Aboriginal Teacher Assistants (ATAs) and Aboriginal Education Workers (AEWs).
If we’re serious about transformation in Indigenous education then we must embrace Aboriginal and Torres Strait Islander leadership in schools and in communities. Engaging community people in schools and making them an integral part of progressive and dynamic learning communities is crucial in turning schools around. (Sarra, nd, p. 3)

It is these words that inspire this project. This project begins at the point where many of the Aboriginal education reports left off — that is, to explore in depth the roles of AEWs. The aim of this research is to focus specifically on the role of Aboriginal Education Workers as a sustainable way to improve educational outcomes for Aboriginal students through technology-based pedagogy. Sarra (2003) highlights a key strategy for improving Indigenous student achievement and engagement in school and higher education is the employment and meaningful engagement of Indigenous staff within schools—Indigenous students have been found to have a more positive sense of self when either Indigenous teachers or Indigenous adults are present at school.

In Western Australia, a pathway to overcome some key issues such as student participation and school retention saw the introduction and employment of Aboriginal Islander Education Officers (AIEOs) in the 1970s in public primary and secondary schools. Essentially, AIEOs were employed to close the gap between school and home. The titles may have changed since this reform was initiated, however there remain persistent educational problems faced by Indigenous communities whether they are rural, remote or urban. At this historic moment it is vital that we recognize the wealth of potential that exists; in our schools, in our communities, and particularly in schools with significant numbers of Indigenous students. Working from within these settings will enable not only a sense of authenticity and stability, but also positive role models for Indigenous and non-Indigenous students alike.

At this time Aboriginal Education Workers comprise a committed presence in schools as long-term participants in education. Aboriginal Education workers remain a stable and continuous part of the school community with Buckskin and Hignett (1994) highlighting that ‘AIEWs are the largest body of education staff who work consistently with Aboriginal students for long periods … and the most stable staff’, (p. 4), as teachers come and go. But few go on to become fully qualified teachers, as they have a flat career trajectory with limited prospects and due to recent State and Federal budget cuts the once 600 strong workforce across the three educational sectors in WA have seen in more recent times their numbers decline. Importantly, this project could become a model for the 2500 AEWs working in schools across Australia (Same Kids Same Goals, 2007).

Numerous reports (cf. Buckskin & Hignett, 1994; Department of Education and Training Western Australia, 2008; Tomlinson, 1994; Gower, et al., 2011) have documented concerns about the role and future development of AEWs in schools. For example, Gower, et al., (2011) highlighted that while it was widely recognized that the role of AIEOs is vital for improving educational outcomes for Indigenous students, a need for greater provision of professional learning opportunities and improved recruitment and retention processes exists. Teachers surveyed identified lack of skills and formal education among some AEWs as one of the barriers to effective working relationships. Acquisition of new skills could lead to improved salary and working conditions. AIEOs commented that their particular skills and roles were often not understood by some teachers, and there was a need for greater awareness of the nature of their work in communities and schools. Gower et al., (2011) also
noted the lack of career pathways for AIEOs, and that the current job description was inappropriate for the range of work performed by them.

This project set out to investigate and then address some of the shortcomings described above that emerged from this preliminary review.

Project aims

The aim of this project was to develop an innovative approach to up-skilling Aboriginal Education Workers (AEWs) using iPad technology, providing information on pathways to further study, and educating pre-service and in-service teachers about AEWs’ critical role in classrooms today.

In researching the role of Aboriginal Education Workers, the project focused on using technologies for research and development in three key areas encapsulated by the themes of Enabling skills, Pathways in higher education and Understanding of AEW roles (particularly for pre-service teachers):

- **Enabling skills**: This element comprised the collaborative creation of a professional learning program for AEWs based on new technologies and their use in creating genuine and culturally appropriate artefacts (stories). The rationale for this approach was to help to develop the skills of AEWs so that they would be able to provide valuable knowledge and support in classrooms in a critical area that is often not mastered by teachers themselves (Jorgensen, 2012). Further, they would learn valuable professional skills in relation to educational and communications technology, by engaging with mobile devices (iPads) to not create stories in audio and visual formats, but also to edit and upload the stories to a dedicated website. These digital stories could themselves be part of induction programs for teachers providing them with an opportunity to develop an understanding of the roles of AEWs and the communities they work with from the AEWs’ perspective.

- **Pathways in higher education**: Creation of a sustainable pathway for AEWs to access Bachelor of Education degrees was the second element of the research. The contextualised skills required to: learn appropriate mobile technologies (such as iPads), plan for collection of material, input audio and visual images, edit material to create sharable stories—to name just a few such skills—comprise significant achievement parallel to completion of an educational technology unit in a first year initial teaching degree. Providing such a program and pathway guidelines (including for Advanced Standing) would assist interested AEWs transition into BEd degrees. A key benefit of this approach is that AEWs could create e-portfolios of the stories and products they create as they learn skills in educational technology and pedagogy. These e-portfolios can form the basis for a career portfolio that can be adapted to suit their future professional needs.

- **Understanding of AEW roles**: The third element was the creation of a module for use in in-service professional development and pre-service teacher education. Using the stories of AEWs and other resources, a module has been developed to promote understanding of how to work alongside AEWs—their roles in classrooms and schools, and how to work in collaboration with them to enhance Indigenous students’ learning and outcomes.
The development of these three areas of interest in the study was then researched using Indigenous methodologies and a design-based research approach, as described below.

### 2.2 Project methodologies

**Design-based research**

An overall methodological approach of design-based research (DBR) (e.g., Reeves, 2006; Reeves, Herrington & Oliver, 2005) was used as a framework for the conduct of the study. The approach involved four phases over four semesters, as depicted in Figure 1 below.

![Design-Based Research](image)

**Figure 1:** Phases of design-based research (Reeves, 2006, p. 59)

DBR is a relatively new approach that is particularly appropriate for research in Indigenous settings because of its strongly consultative focus, and because it addresses complex problems in real contexts in collaboration with practitioners. It is also appropriate for development research, where an innovative approach is implemented, and there is an emphasis on making a project work, rather than simply researching whether it works or not.

The research involved four phases that aligned with Reeves’ (2006) model of DBR, depicted in Figure 1 above. Each phase, together with the three interwoven project elements, is described in brief below.

**Phase 1: Analysis: AEW roles and technology**

*Phase 1* was guided by the question: *What are the potential educational roles for AEWs that are enabled by e-learning and mobile technologies?* An investigation and analysis of technology use in Indigenous educational settings was conducted through an in-depth literature review and an online survey, with an invitation sent to all AEWs working in West Australian schools and their school principals. The views of Indigenous experts, and sector advisors were also sought through meetings and discussions. Investigation and analysis was also conducted to explore higher education pathways for non-typical entry, together with means and methods universities have adopted to provide advanced standing credit for university study (Price, 2005). In promoting understanding of the role of AEWs, investigation and analysis of the current role of AEWs across different school sectors was conducted through access to recent reports (e.g., Gower et al. 2011).
Phase 2: Development: Professional learning

Phase 2 focused on providing solutions or further opportunities, based on the findings from Phase 1. This phase addressed the question: What are appropriate strategies for professional learning for AEWs, pre-service and in-service teachers? A professional learning course for AEWs was designed and created, based on design principles derived from the literature review, the surveys and other consultations. A course of activities comprising the equivalent of a semester unit of study was designed and developed for up to 30 AEWs self-nominated through the survey, and from across all school sectors (WA Department of Education, Catholic, and independent schools), and remote and urban schools. The course focused on technology skills and pedagogical strategies appropriate for use in primary and secondary classrooms, based on mobile technologies (iPads) to facilitate the enabling skills of AEWs in their classroom roles. These activities create pathways to higher education, as they can be used in the development of an e-portfolio, and serve a dual role, also as assessable tasks for a unit of study to be taken by AEWs over twelve months, comprising the equivalent of advanced standing/RPL for one base unit in a Bachelor of Education. Unit curriculum, workshop activities, e-learning and communication strategies were planned and developed during this phase, ready for implementation in Phase 3.

In addition to the course materials for AEWs, a 2-week PD module was also planned and developed during Phase 2 for pre-service and in-service teachers, with the goal of creating a means to promote understanding of the cultural significance of AEWs and their role in the classroom. The module, entitled Building relationships with AEWs, has been developed as a web-enabled learning environment, together with guidelines for its use as an embedded topic within a foundation unit for a BEd or as a stand-alone in-service teacher PD module. The PD module is one that any university or institution could use or adapt, either as an embedded task in an introductory teaching unit or as a shorter stand-alone PD session.

Phase 3: Implementation and evaluation: AEWs and mobile learning strategies

Phase 3 comprised the implementation of the AEW program guided by the question: What pedagogical strategies facilitate the use of e-learning and mobile learning devices in Indigenous primary education settings? The authentic activities using mobile technologies were implemented with 32 AEWs nominated from the surveys and consultations. A set of iPads was purchased for use by AEWs to act as a communication device, cognitive learning tool, and production and delivery instrument for products (such as digital stories). A series of workshops were conducted in Perth and regional hubs to commence the unit and associated activities. The workshop introduced AEWs to activities with iPads, brainstormed the educational uses of iPads in classrooms and communities, provided instruction and practice on the creation of digital stories, and demonstrated how the iPads could be used for communication and learning in the completion of the educational technology unit through subscription to a Moodle-based(LMS). AEWs completed embedded authentic tasks with online and in-school support.

Phase 4: Model and resources: Learning principles

Phase 4 consisted of a process of documenting and reflecting on all findings to produce design principles, with the focus question: What pedagogical principles can guide the use of mobile technology to empower AEWs? It is important to reflect upon those understandings, and to disseminate them in a freely accessible manner to educators.
Indigenous methodologies

Within the overall approach, Indigenous methodologies were employed in all stages of the project. Indigenous research methodologies and practices are as varied as Aboriginal peoples, their community contexts and the ‘Country/s’ that ground them. The methodologies enacted in this project were done so with purpose — to engage the issue of Indigenous knowledges and voices of the participants.

Indigenous methodological approaches lend themselves to ‘situational responsiveness’ (Patton, 2002) and given the depth of the cultural diversity amongst Aboriginal peoples, their communities and their working contexts, it was necessary and culturally appropriate to draw on a number of inquiry methods, while keeping in mind the Aboriginal protocols and school regulations that needed to be negotiated throughout this project. Further, as we were working in ‘localised’ and authentic spaces, at all times we acknowledged that these spaces are grounded in “the politics, circumstances and economies of a particular moment, a particular time and place, a particular set of problems, struggles and desires […] and possibility/s” (Denzin, Lincoln & L.T. Smith, 2008, p. 9). By understanding and acknowledging the locality of space across three educational sectors, it allowed the research team to empower the project participants—all of whom are key cultural brokers in their respective schools—to discuss the reality of their roles as AEWs on their own terms, in their own contexts, and to develop their digital skills based on their existing skill level/s and context needs. A major element or central tenet of the project’s methodology was the Aboriginal protocol of ‘to sit and listen’, that is, to listen to the voices of the AEWs all of whom have something worthwhile and important to say about the space they occupy within Aboriginal education, a space that over the last four decades has been continually acknowledged as having a key role and presence for Aboriginal students and their families.

As with any research it is essential to develop an understanding of the context and in this case we needed to understand what AEWs were doing in their roles on a daily basis as well as the contexts in which each were employed. By utilising Indigenous methodologies alongside design-based research we were able to collaborate with the participants through interconnected phases of survey, data collection through yarning sessions which in turn developed and enhanced the Professional Development Sessions and respective field trips. We are also aware from the research team’s extensive research experiences that ‘unknowns’ often appear, and thus the research needed to remain open and flexible, for it may be that the ‘unknowns’ could revolutionise the direction and the method/s of the research. Combining Indigenous methodologies and design-based research readily gave us the space to accommodate ‘unknowns’ if and when they appeared. Moreover, an interpretative approach allowed the flexibility for the methodology to strategically align skills with the digital technology design for each of the AEWs grounded in their needs, roles and contexts. This approach added an authenticity to the research itself because it was based on the breadth and depth of AEWs’ experiences. Another central tenet of this research was enacted through a pedagogy of emancipation and empowerment (Rigney, 1999) that encouraged a ‘shared approach’ as participants were considered to be co-researchers— this ‘sharing’ required constant negotiation to ensure that the research was equitable and responsive to the needs and contexts of the AEWs.
As previously stated, the Indigenous methodologies deployed have been grounded upon previous research experiences undertaken by members of the research team. This allowed this project to start from a space where relationships were already established in a number of the contexts within which we needed to enter. Additionally, Indigenous epistemological and axiological ways of conducting research is strongly realised through established relationships, for it cuts through the ‘humbug’ of unfamiliarity. Given that this is an educational research project, it allowed us to [re]connect at the cultural interface (Nakata, 2007), in this case in the schools and classrooms where AEWs are situated. It is these established relationships that fostered the goodwill that began work on the planning for the current project, and it was the hours of yarning from these relationships that morphed the ideas for the Skilling Up project. It is here that Indigenous research methods through ‘local’ epistemological ways of knowing and doing were used to empower the participants in their roles as AEWs. Additionally, our methods add another branch to the Grounded In Country methodological framework currently in development to assist researchers when working on ‘Country’, in ‘Country’ alongside and with Aboriginal peoples and their respective communities (Jackson-Barrett & Price et al., 2015). This framework offered a starting point into specific approaches that work across borders to engage and privilege Indigenous voices, knowledges and experiences within the academy that were previously prescribed by western institutions and the disciplines contained within them.

**Reference group**

A Reference Group was established to guide the project. Most people on the reference group are Aboriginal Educators from different education sectors who brought a diversity of networks and established relationships to the project. Relationships are a central tenet when working alongside Aboriginal peoples and it is these relationships that provide information and introductions to communities where appropriate. Eminent Indigenous academics and key stakeholders served on the reference group, including:

- Priscilla Reid-Loynes, Indigenous Educator and Consultant (Melbourne, Victoria)
- Karen Toigo –Challenger Institute of Technology, Lecturer Cert 3 & 4 for AIEOs
- Freda Ogilvie, Deputy Principal, Halls Creek District High School, Kimberly, WA
- Chris Porter, Manager Equity and Diversity, WA Department of Education and Training
- Valerie Gould, Executive Director, Association of Independent School of WA
- Robyn Collard - Catholic Education Office
- Dr Cheryl Kickett-Tucker, Associate Professor, Director Pindi Pindi National Research Centre for Aboriginal children, families and communities
- Dr Bronwyn Fredericks, Adjunct Professor, Queensland University of Technology

Reference group members were consulted for advice and support throughout the project, with a quarterly project update sent through to each member throughout the life of the project.
2.3 Project outputs and findings

Literature review and research report

A literature review was conducted to develop an understanding of the past and current roles of AEWs in Australian schools. The purpose of the ongoing review was to provide the research team with a literature background that would support the Design Based Research (DBR) methodological approach by analysing practical problems from which solutions could be developed through iterative and collaborative cycles. The review of the literature included reference to publically available government reports, academic research literature, reviews, industrial relations documents, HDR theses, and public commentary.

The review commenced with the development of an annotated bibliography which provided the team with an overview of key terms and themes emerging from early data base searches, leading to the development of a comprehensive and diverse reference list housed in an EndNote Library. The library included embedded papers (where available), and it was accessible to all members of the project team through the online cloud storage service (Dropbox) used throughout the life of the project.

An early obstacle was the difficulty posed by the varied nomenclatures used to describe AEWs across sectors, states and territories. Similarly, the lack of state, territory or national workforce data base pertaining to AEWs made finding relevant statistical data difficult. Recent government reports have recommended the need for better national workforce data on all school employees – including teachers and para professionals.

Recurring themes in the literature is that the employment conditions of AEWs are often insecure and lowly paid with little access to professional development or career progression and are too often marginalized within school settings. Such comments have echoed through the decades from at least the 1970s and have been again repeated in the comprehensive review of AEW roles in WA by Gower et al (2011). This is despite overwhelming acknowledgement in the literature that the employment of AEWs is critical to improving Indigenous student success at school and improving understanding and respect between Indigenous and non-Indigenous Australians. This is particularly so as the Australian curriculum and AITSL professional standards mandate Indigenous studies and knowledge of Indigenous histories and cultures across the curriculum.

A second theme identified in the literature is that the roles of AEWs are diverse and complex. Industrial relations role statements and sector duty statements list up to 20 or 30 different roles ranging from simple skills to complex roles that involve advising schools and navigating spaces between schools and communities. Drawing together the various roles, three broad themes emerged and were labeled as “Cultural Bridges”, “Cultural and Linguistic Knowledge Workers” and “Role Models”. Increasingly it was also found that AEWs were being expected to take on the role of attendance monitors. For each of the roles identified there were differing views in the literature as to the extent to which these roles can be seen as facilitating improvements in Indigenous student outcomes and relations between Indigenous and non-Indigenous Australia or perpetuating already existing stereotypes that work against real and sustainable shifts in attitudes and practices.
A third area of investigation in the literature involved the use of ICTs in professional development in Indigenous settings. It is clear that ICTs and e-learning can play an important role, especially when used in authentic learning environments (Herrington, Reeves, & Oliver, 2010) where context and authentic tasks are principal enablers of the creation of genuine and valuable products. ICTs also provide social and cultural affordances that are appropriate to Indigenous communities. For example, Wallace (2008) used technology in a range of educational contexts, including training of Indigenous teacher aides in integrating technology tools into learning. Eady, Herrington, and Jones (2010) also found that literacy practitioners identified four key benefits of using computer technology: the facility to build on cultural and learner strengths through a focus on visual literacy, oral memory and spatial relations; accessibility to higher education and work readiness programs; improved social networking and communication opportunities; and the accessibility of professional development opportunities for the practitioners themselves.

Elliott (2009), in a project developed to promote teaching careers among Indigenous teaching assistants in the Catholic Education sector in the Northern Territory, successfully employed digital tools and technologies to provide wider access to ‘the world of education, teaching and learning’ (p. 1) by building community and personalising learning. The use of stories has a synergy with the oral tradition of *yarning* but the approach has not been without its problems. For example, in Jorgensen’s (2012) study of the use of digital media to mediate learning in Aboriginal communities, several difficulties mitigated against successful educational outcomes (e.g., teachers struggled with the technology, students almost exclusively chose to tell only sports stories, and they resisted editing and completing their stories).

In reality, the literature review revealed that there were examples of very good practices and some bad. In the ideal situation, good practices aligned with good school leadership, in a technology-rich environment, and a culturally safe school environment where AEWs were respected and their complex and necessarily varied work at the cultural interface was valued.

Unfortunately, again and again it was found that opportunities for effective professional development for both AEWs and Teachers and Principals was lacking. The literature review provided fundamental support for the need for the *Skilling Up* Project. The review of the literature has been drafted as a journal article and is currently awaiting review.

**Postcard for project dissemination and networking**

In the first weeks of the project, graphic design elements were created included the project logo, poster (see Figure 2 below), letterhead, PowerPoint templates, and email signature graphics. A postcard was also designed and printed for dissemination of information about the project during data collection and at conferences, and for networking purposes (see Figure 3).
Survey

Once ethical approval had been obtained from all three sectors and the university, a survey to investigate and analyse technology use in Indigenous educational settings was conducted through an online survey, with an invitation sent to all AEWs working in West Australian schools and their school principals.

In order to investigate the potential educational roles for AEWs that could be enabled by e-learning and mobile technologies, the survey was designed to explore the views of AEWs themselves and principals throughout Western Australia. The survey comprised a mix of questions requiring answers in the form of multiple choice and descriptive text. Questions varied slightly in content and form for each group but broadly focused on the following areas:

- **Principals**: Demographic information (gender, age, sector, years teaching, number of teaching staff and AEWs in school, etc.), policy governing AEW role in school, the extent of ICT use in the school, professional development opportunities for teachers and AEWs in the school in relation to ICT, the access AEWs have to mobile technologies or other ICT in the school, the educational role of AEWs in relation to ICT use with students in the classroom, and issues or problems identified in relation to ICT use by AEWs or the school generally.
• **AEWs**: Demographic information (gender, age, sector, working on or off country, etc.), roles performed as an AEW, policy that oversees role, induction and professional development opportunities, the extent of ICT use in the school, professional development opportunities for ICT, the access AEWs have to mobile technologies or other ICT in the school, the educational role of AEWs in relation to ICT use in the classroom with students, and issues or problems identified in their learning to use ICT or their implementation of ICT in the classroom.

The surveys were created in an online form (using Survey Monkey) and all school principals in Western Australia were sent an email and invited to participate. Principals were also asked to advise AEWs in their schools of the survey, and encourage them to participate. A reminder email was sent approximately three weeks after the original request.

A total of 82 responses were received from the survey (51 principals and 31 AEWs). Of the 31 AEWs, 23 were female (79%) and six were male (21%). There were a range of ages: six were 18-25, eight were 41-45 years old, and six were 51 or over. 71% worked in primary schools, and 87% were in the government sector. 73% had permanent employment, and 81% were working on country. There was a close split between full-time employment (15, 52%) and part-time employment (12, 41%); only two were casual.

Of the 51 principals, 29 were female (57%) and 22 were male (43%). Most of the responses were from principals of primary schools (38, 75%) and 45 (90%) were in the government schools. More than half of the respondents had only one AEW working in the school (26, 52%) but 11 had two AEWs, five had three AEWS and four respondents each reported having four AEWs or five or more AEWs working in their school. Approximately 88% of principals had six or more years of experience working with AEWs (43 responses).

The survey responses supplied qualitative data from which the project team were able to draw up and develop the strategies for the professional development sessions. Of interest for the consultative phase of this research was an exploration of: current roles performed in schools by AEWs and how they use ICTs in their roles, together with emerging issues and problems. Qualitative and quantitative data retrieved from the survey allowed the project team to design the professional development workshops around the needs of the AEWS. It was clear that from the data that demographically hubs were beginning to appear based on those principals and AEWs who were willing to participate in the *Skilling Up* project. The hubs were based in the Kimberley, Gascoyne and Perth urban and regional areas.

**Survey findings**

Over 300 schools in total were sent the survey across the three educational sectors all of whom employed AEWs in either a full-time, part-time or shared capacity. Fifty-one principals in total responded to the survey with 31 AEWs responding individually from their principals. It is interesting to note that some of the AEWs participating in the project did not actually get to undertake the survey due to not knowing about it. By the time they contacted the *Skilling Up* Project having learnt of the project via word of mouth from various Indigenous education networks and already selected participants, the survey had closed.
Roles of AEWs
When asked similar questions on the roles that AEWs performed, and given 12 options from which to choose (plus ‘Other’), both groups agreed that most important roles are education support (small group and individual work) (100% AEW/98% principals) and cultural celebrations (97%/94%) such as NAIDOC week. Similar results were also found for parent and community liaison (87%/96%), and teacher-student communications (87%/78%). Notable differences relate to administrative tasks (63%/35%), behaviour management (70%/55%) and professional development (27%/53%). Nevertheless, it is evident that there is generally close alignment between the AEWs’ and principals’ views of AEW roles in schools (see Figures 4 and 5).

Most of the AEWs received an induction (22, 73%) and training to assist them in their role (20, 69%). Interestingly, the top two types of training given were in education support (13, 62%) and behaviour management (12/57%). However, only four respondents (19%) indicated that they had received training in the use of ICT support for teaching. The use of ICTs, in particular, computers and mobile devices, is discussed in the next section.

Use of ICTs in AEW roles
Mobile devices, such as tablets and iPads, have a great deal of potential to be useful to AEWs in their educational support roles, particularly for individual one-on-one and small group work. Of the 31 AEW responses received, 28 stated they used mobile devices in their role (93%). The three top tasks using ICTs were in education support (small group and
individual work) (22, 81%), cultural celebrations (16, 59%) and equal third were teacher-student liaison, attendance, and administrative tasks (13, 48% each) (see Figure 6).

Most principals (44, 88%) indicated that their AEWs used mobile technologies in their role, with only six (12%) answering that these devices were not used at all by AEWs. Most use of the devices was reported in the education support role (small group and individual work) (38, 86%) which again reflects the key importance placed on this role by principals (see Figure 7).

![Figure 6: AEWs’ ICT use in roles](image)

![Figure 7: Principals’ reports of AEW ICT use in their roles](image)

The high use of mobile devices by AEWs in their roles revealed in the survey is a positive finding, particularly when the devices are used for educational and cultural purposes. However, a few issues and problems were also revealed in the survey and these are discussed in the next section.

**Issues identified in the use of ICTs**

Identifying opportunities for the use of mobile technologies was an essential aspect of the study, but it was also important to explore problematic issues and impediments to the educational use of the devices. This data was mainly collected through open-ended qualitative questions on the survey. Two major themes emerged in this regard: lack of access and training. It was clear from the review of survey comments that professional learning is considered one of the most important elements in preparation of AEWs for the use of iPads and other mobile devices in education, particularly for their learning support...
roles and their engagement in cultural events and celebrations. Access to a dedicated and personal device was also seen as a key imperative.

**Infographic**

The project investigated higher education pathways for non-typical entry together with known pathways. Despite pathways being available, unless you know what you are looking for, and are familiar with the terminology associated with a particular pathway (e.g., recognised prior learning (RPL) or bridging course), these pathways are not readily or easily found. As part of the project, an ‘infographic’ was created to allow easy access to this information for AEWs. The entry pathways for AEWS or any Indigenous person aspiring to undertake higher education is featured in the infographic (see Figure 8).

![Infographic on pathways to university](image-url)

**Figure 8:** Infographic on pathways to university

The infographic is available on the project website and can also be printed for notice boards in schools and general information.

**Two-week PD module for pre-service and in-service teachers**

A two-week professional development module was developed with the assistance of AEWs from the *Skilling Up* project for delivery to both the pre-service and in-service teaching workforce. Some of the issues that were raised by the AEWs that informed the content and design of the module were:

- There is a need to teach teachers that AEWs are not education assistants (EAs). The role of the AEW needs to be fully understood by all staff
- Job roles needs to be defined so all staff members fully understand
• Teachers must learn to appreciate the work that AEWs do, because their work is multi-faceted and they have many roles that they do both in school and out.
• There is a need to understand that AEWs not only belong to the school but also the community, and their own families always come first.
• School communities need to talk about the subtle racism that exists in schools between workers and parents towards all Aboriginal people.
• Need to understand the role of the AEW as Liaison Officer among Student/Staff/Parents/Principal/Community.
• Teachers must be more culturally sensitive and responsive, including respect (how to be, what to do).

These issues highlighted by the AEWs were addressed in the PD module, designed to be a short stand-alone PD program for in-service teachers, or as a two week module embedded within an introductory teaching semester unit for pre-service teachers. The module explores cultural and pedagogical issues associated with AEWs roles, and provides effective strategies for teachers working alongside AEWs in classrooms and other educational contexts (see Appendix B). The module is being trialed in Semester 1, 2016 at Murdoch University in a third year Bachelor of Education unit entitled Country, cultures, peoples. Feedback on the trial will be incorporated in new versions of the unit and reported on the website.

**Project website**

A *Skilling Up* website was created to provide access to and information on project resources, to host a learning management system for activities with AEWs, for dissemination, and as a platform for project deliverables and products (see Figure 9).
The project website (http://bit.ly/skillingup) hosts the key deliverables and all curriculum materials and others resources developed in the project. The website was a focal point for the project activities, schedule and resources, specifically: the websites, stories and apps resources created by the AEWs; the pathways to university resources; general resources, including ICT supports; and information on the project team, conferences for dissemination and contact details. In each phase, the substantive value of the website has grown, both as an important communication device and as a repository for relevant resources, and products generated by the project.

The website has been developed on the Moodle platform (also used for the Learning Management System). The user interface utilised standard Moodle interface components and features the Skilling Up logo and other graphics designed for use as a masthead for the site to distinguish it as an OLT funded initiative.

At the completion of the project, the website has been incorporated into the professional development processes of the university as a valuable resource. The website will be maintained this way, and a budget item has been included to cover its maintenance for a period of 5 years. At this point a maintenance evaluation (Reeves & Hedberg, 2003) will be conducted to determine the changes required to maintain impact.

**AEW Professional Development: Design principles**

The core of the project was the professional development program designed for the AEW participants, and the design and conduct of the workshops are important and sharable outcomes of the project. According to the design-based research approach, draft guidelines or design principles for the design of the innovation (the PD) were based on the consultations with practitioners through the survey, and through the literature review. The PD should:

- Enable work in partnerships with Indigenous community members (Wallace, 2008)
- Adopt an epistemology that is consistent with, and supportive of constructivist learning and multiple Indigenous perspectives (McLoughlin & Oliver, 2000)
- Design authentic contexts, tasks and assessments (Herrington, Reeves & Oliver, 2010)
- Provide ready access to technology, and professional learning and training (Project survey consultation)
- Require problem solving in learners’ own places (Wallace, 2008)
- Allow a culturally safe space for participants to network and yarn about their work, their successes, challenges and other issues in their roles in schools and communities (Power, 2004)
- Place the learner in full proximal and temporal control of the [mobile] device (Kim, 2009)
- Scaffold digital literacy (Wallace, 2008)
- Ensure flexible tutoring and mentoring roles that are responsive to learner needs (McLoughlin & Oliver, 2000)
- Require the creation of meaningful and worthwhile products (Herrington, Reeves & Oliver, 2010)
- Allow space and time for the unexpected (Wallace, 2008).
Each element of the design of the PD and its implementation is described below in more detail.

**Workshops:**
Prior to the commencement of the PD, and based on the findings of the survey, the project team developed the following:

- Participant hubs were suggested based on principals’ and AEWs’ responses to the request for Expressions of Interest (EOI) for the project. Three hubs were created for more contextualised workshops and onsite visits: The metropolitan area of Perth, the Gascoyne area, and the Kimberley.
- A course of task-based study was designed equivalent to a first year Bachelor of Education unit of study. A unit guide was developed including three essential authentic tasks (Herrington, Reeves & Oliver, 2010) that constituted a core semester unit in an educational technology subject (see Appendix C for the *Skilling Up* Unit Guide). The three tasks required the design and creation of:
  - A website to be used as an ePortfolio
  - A digital story incorporating images and sound
  - A pedagogical strategy for individual students or small groups using iPads and educations applications (app).

All participants in this project were issued with iPads at their initial workshops. The exception to this was the Kimberley regional participants as the school principal requested that iPads be provided by the school with apps pre-loaded by the school’s IT provider in Broome. In many remote communities, schools are more often than not the only location with access to the national broadband network. Whilst this was a generous offer, an unexpected outcome was that participants were limited to iPad use and access only within the school hours and premises, and they were unable to take them home for further exploration. For the Kimberley participants, there was a total of three site visits from two team members. It was not feasible from both a community perspective or financially to have all the participants leave their community and families. As all were employed at the school it was more realistic for team members to travel to the people and their community. Because of the distinct nature of the Kimberley remote school hub (that is, a single school, iPads provided by school, and all workshops conducted on site), a detailed description and discussion of this cohort is provided below, followed by the description of the Gascoyne and Metropolitan cohorts.

**The Kimberley remote school workshops**
The Kimberley Remote School hub is located 280km south east of Broome or 100km south west of Fitzroy Crossing in the Kimberley region of Western Australia. The best option for travelling to the community was a one hour journey by light aircraft from Broome as the road journey of 453km on sealed and unsealed roads can take more than 10 hours. The current population is approximately 360 people and is home to the Yungngora people. The School is an Aboriginal Independent Community School employing 16 AEWs. The selection of Kulkarriya provided the opportunity for a large number of AEWs to participate in the project.
Under the provisions of the project, each participant was to have received a Murdoch University-provided iPad; however, the Principal of the school preferred that the AEWs use the school’s iPads (40 for staff and student use). These iPads contained restricted internet applications and were only available during normal school hours. The principal approved the free Weebly and EduCreations apps that were recommended for the development of the website and the digital story (Tasks 1 and 2), and these were loaded onto the devices by an Internet provider in Broome. Three visits were arranged for the school in March, September and November 2015. Each workshop was scheduled to run for 2.5 hours (see Figure 10)

![Figure 10: Workshop for the Kimberley remote school hub](image)

For the first workshop, the principal arranged for two separate sessions of 3.5 hours with eight AEWs in each group. The AEW participants had previously used the iPads, however, many had not worked with apps that required the use of passwords due to the restricted access imposed by the school. Following an introduction to the program by the project team member, each participant needed to create an account to access the Weebly and EduCreations apps. Some participants experienced difficulties creating accounts so a shared temporary email address and password was arranged for the participants who had issues. Given access issues, most but not all AEWs were able to complete or make good progress on Task 1, being the development of a personal website.

The principal organised for two separate sessions for the second workshop, however, as only eight AEWs were available to attend this workshop each session consisted of only four people. The Skilling Up team members discovered that very little progress had been made since the first visit, so the low number of participants was fortuitous as it allowed one-to-one support with the participants. AEWs who had completed the website for Task 1, commenced on Task 2, the development of a digital story. At the conclusion of this session, one AEW had completed two tasks, and the remainder were able to at least complete Task 1 and some made substantial progress on the Task 2 story.

Upon arrival at the school for the third workshop, the Skilling Up members were informed by the principal that only seven AEWs were available to attend this final workshop session, so it was decided to run one full day session with the whole group. Some of the participants attending had not attended Session 2, so the objective of the workshop was to complete Tasks 2 (digital story) and 3 (Teaching apps). Prior to this third workshop the team had
become aware of another iPad project being undertaken at the school, so the team decided to join forces and use the *Let’s Learn Our Words* app for Task 3. This app is one of a group of applications being developed by Dr Alistair Campbell from Edith Cowan University to support and sustain local culture within remote Aboriginal communities (see *Supplementary and unexpected outcomes* below).

During this workshop two AEWs who had not attended the second workshop completed Tasks 1 and 2, and five AEWs completed Tasks 2 and 3. For Task 3 the participants recorded 10 English and their corresponding Aboriginal words (Walmajarri and Kriol language) in text, orally and images. This has resulted in the development of five activities: Body parts, Trees, Kriol words, Family words and Bush tucker words. These activities have been installed on the School’s iPads for the AEWs to use in class.

Despite technical issues, restricted access to iPads and varying attendance numbers in each of the three sessions, the outcomes at the Kimberley remote school proved to be very successful.

**The Metropolitan and Gascoyne hub workshops**

The original proposal for the project planned all workshops to be conducted in Perth, with participants travelling from their home locations to attend. As noted above, no participants from the Kimberley hub travelled to Perth, but the initial workshops for both the Gascoyne and Metropolitan hubs were conducted at Murdoch University in Perth.

The iPads required setting up in the first workshop, and details such as passwords for iTunes and email addresses were required—which proved to be problematic for some of the participants because they did not have (or could not remember) their passwords for these accounts. This was successfully overcome with the use of a generic password created by the project team’s IT advisor, so that the devices could be set up for future use. Example pictures from these workshops are provided in Figures 11-12 below.

![Figure 11: Initial workshop for the Perth urban and eastern regional hub](image-url)
From the initial workshops in both the Gascoyne and Perth hubs it was established—based on the conversations and feedback comments—that all AEWs had very different working contexts. The team felt that in order for the project to meet the needs of the participants at future workshops and the project deliverables, it was imperative to see the authentic contexts in which each participant was working. Subsequently, two team members arranged two visits to all AEWs individually at their respective schools, with further workshops held in Geraldton (1) and Perth (2) held over the duration of the project.

Due to the demands that accompany working in the role of an AEW, many participants had little time to actually complete the tasks set. This was effectively addressed with the site visits by dedicated time devoted to working on an individual basis with each of the participants to complete the tasks. Every AEW had a visit from the team members to their respective schools. Participants within the same hub had a 1:1 visit on the same day or during the same week, so project team members could appreciate the authentic contexts in which the AEWs worked and also to meet the AEWs' principal. For those AEWs who were employed on a part-time basis, team members arranged individual mini workshops at the university to assist those unavoidably delayed by lack of time and wifi access. Further visits were scheduled either on a 1:1 basis or with a group at one school/venue that was convenient for the participants within that particular hub.

While not all site visits went entirely to plan, some proved to be worthwhile for both participants and project team members. Project team members were able to yarn with the AEWs about their roles and their future aspirations in the role. It was possible to problem solve with AEWs on issues they bought up in relation to education strategies that might assist their particular need. In one instance, an AEW had been appointed Chair of the School Board and inquired as to the sequence of events that typically occur at Board meetings. The team was able to provide information on this topic via the iPad, which was then uploaded to the iPad library for easy access. Some AEWs recorded their anecdotal records for students and timetables (with colour coding) to assist them in their daily routines.
As an additional benefit to the on-site workshops, some sites (such as Geraldton) were more than four hours drive (one way) from the project base, and this time allowed the team to debrief the sessions, and come up with innovative approaches where necessary. Universally, the site visits allowed project team members to build cohesive relationships with the participants across the hubs and also among team members.

The ability and willingness to adapt the format of the initial intentions of holding all PDs in Perth was an integral part of the design-based research (DBR) approach, and in keeping with respect for Indigenous methodologies and protocols. The ability to be so flexible is a strong feature and clear strength of the DBR method employed (which seeks to adapt to circumstances to make an innovation work rather than assess whether it does work). This gave the team the ability to improvise to overcome obstacles, and to flexibly adapt to the needs of the participants.

**Workshop feedback and evaluation by participants**

At each of the Professional Development workshops participants were given feedback and evaluation sheets for the purpose of ascertaining if their needs were being met, to indicate what their needs for future workshops were, and to indicate anything they did not like about the workshop format and content. Participants were also given an agenda for the workshops which allowed time to ‘troubleshoot’ any issues that participants (or project team members) were experiencing and also to have space to discuss issues around their roles with other participants.

All participants (Perth regional and Gascoyne hubs) indicated that the off-campus venue was adequate, and the workshops were generally useful. Further feedback from participants included statements such as:

- There was plenty of support and guidance
- Doing the course with other assistants allowed the space to network
- Liked learning new skills and the relevance of information for our roles
- Friendliness
- Ability to take the iPads back to school
- Learning for the first time with an iPad and everyone helping each other
- They learnt how to create a website and there were useful apps
- How to get into and access gmail
- Easy step by step information with a hands-on approach with practical application.

When asked to suggest needs for upcoming workshops, participant responses included:

- More 1:1 guidance needed
- Extras, like how to take pictures
- Resources for teachers to teach Aboriginal Education
- Find other apps and ways to use the iPad to help students
- Refresher course [of previous learning] at the start of each new workshop
- A recommended language app that can be used to enliven LOTE to students
- Maths and reading apps that are in Aboriginal language
- Indigenous resources apps and NAIDOC resources.
Importantly, in order to improve or adapt future workshops, AEWs were asked to suggest changes to improve the workshops, and to indicate if they found any part of the workshop irrelevant. Neither of these questions received a single reply.

The feedback overall was vital to the project for it guided project team members in their planning for their 1:1 visits to participants in their respective schools and the ability to change the structure for future workshops if this was indicated by the participants. The common feedback was positive and reflected that the participants gained experience through digital technology noting also that the workshops were well organised, with the project team offering support and guidance in an approachable, professional manner.

The final evaluation for Workshop 3 for the Gascoyne and Perth regional hubs was completed by the external evaluator for the project Associate Professor Karen Trimmer (see Appendix D).

2.4 Project findings and recommendations

Factors contributing to success

The success of the project was the result of a number of factors. The project team had strong leadership based on individual team member’s area/s of expertise and the following factors:

- Leadership of the project by Indigenous members of the research team
- A strong commitment from the project team ensuring the success of the project through collaboration with participants and regular team meetings
- Knowledge of, experience with and respect for Indigenous research methodologies and ethical protocols: ways of doing, establish relationships, yarning, deep listening
- Constant monitoring of the project aims and deliverables during the four phases of the project
- Collaborative approach undertaken to ensure the success of the deliverables, and development and writing of outputs, such as publications and conferences attended
- Collaboration in dissemination maximizing the opportunities to disseminate across networks, and in the lead and partner institutions
- Delivery of innovative professional development workshops; which engaged the participants, with flexible and adaptive planning and ongoing reflective debriefing
- Excellent IT advice and support on technical and pedagogical aspects of iPads
- Generous support from the School of Education (Murdoch University) through the purchase of iPads for AEWs and project team members
- Strong project management through:
  - Regular meetings of the project team and external evaluator (by Skype) with clear agendas, and detailed minutes (with actions listed) to track discussion and ideas
  - Planning days conducted across the institutions.
  - Production of tangible outputs (postcards, posters, etc.) and regular contact with participants outside the designated workshop times.
Challenges encountered
A number of challenges presented themselves throughout the *Skilling Up* project and these are outlined below with discussion as to how these challenges were resolved. Such solutions were possible through the flexibility of the Indigenous methodologies employed and the design-based research approach. Original plans were revised with flexibility and innovative thinking:

**Ethics consent**
The project required ethical consideration by three school sectors as well as Murdoch University’s Human Ethics Review Board. One of the school sectors had a number of issues that required an inordinate amount of time to resolve, which hindered the commencement of the project. The project team has extensive experience in the areas of Indigenous research, ethical protocols and education. Two project members are Indigenous with one having completed their PhD in Indigenous ethics, another is a member of the University’s ethics committee.

Nevertheless, because of past and continuing cases of inappropriate or damaging research, it appeared that excessive caution was being exercised by this sector in meeting national ethical guidelines for research involving Aboriginal and Torres Strait Islander Peoples. Given this outcome, researchers (and research funding authorities) need to factor in likely delays resulting in unanticipated requirements to ethics approvals that fall outside national guidelines. The project proposal was originally for the duration of two years, but the timeline was delayed significantly given that ethics approval took over six months to obtain.

**Project Manager**
Unfortunately the project lost its original Project Manager one year into the project. It was very hard to find someone with the relevant skills to work in this space and context, which required developing and maintaining key relationships, so the Project Leader took over the project management role with the help of a Project Assistant.

**Participants**
There were password and email issues for many of the participants with their Apple iTunes accounts and respective employer network accounts. There were also issues of lack of internet access, as some participants were not given access to the school’s wifi. Some were also hindered by the lack of access to the National broadband network due to their remote locations. A number of participants were not in the position to afford their own wifi access at home or by mobile phone package, or had limited NBN access due to their locality so we had to be innovative in our approach during some 1:1 visits. This was solved by one of the team members creating a personal ‘hotspot’ to the internet for the iPad through their own smartphone. This strategy gave participants the ability to work on their tasks through the team member’s generic email account for the duration of the visit.

A major challenge for the participants was the sheer lack of time in their day to day job routines to allocate time to complete the tasks set in the project. We eliminated this aspect
for the participants by including this in future workshops and by taking the time to visit each participant in their own school on both a 1:1 and group basis.

It is worth noting that some (but not all) of the participants were effectively disempowered in their endeavours by the lack of communication from their principals, lack of autonomy in their roles, and lack of financial means to access wifi at home.

**Technical and logistical problems**

All workshops suffered in some way from technical and logistical problems, but the third workshop in Perth suffered inordinately from a range of such factors. It was hosted in a different room from previous workshops at Murdoch University, and it bought all participants from the Gascoyne and Perth regional hubs together, including one via Skype. There were a number of issues beyond the control of the project team that impacted on the day such as:

- Two project team members were taken ill
- Delayed start time because the waiting time for the maxi-taxis to transport the participants to the university were overdue by 2 hours
- Facilities that required technicians to sort through despite this being checked prior to the workshop.
- Malfunctioning projection equipment
- Network issues with the university’s network that prevented the Skype session continuing in the afternoon.

Downtime from these issues significantly impacted on the agenda of the workshop. Nevertheless, despite the significant loss of time, many of the participants were able to showcase the work they had completed. This workshop was not indicative of previous workshops as evidenced in the feedback sheets. For those participants who needed assistance to work through their individual task issues, the team renegotiated a site visit to assist on a 1:1 basis.

The evaluation for this session was completed by the external evaluator Associate Professor Karen Trimmer.

**Supplementary and unexpected outcomes**

- Three AEWs across the three different research hubs have expressed an interest in embarking on a teaching qualification. Further research into an internship style enrolment needs to be investigated that is suitable to enhance their success at tertiary study and also to capture the needs of their particular school.
- Participants in two of the hubs expressed that the iPad (because they were able to take the device home and use it for a range of activities beyond the scope of the immediate aims of the project) had impacted beyond themselves as family members and individuals, with comments such as:
  - My grannies [grandchildren] are helping me find apps
  - My grannies are so good at this iPad, I am so old school and slow
  - We are reading books that I have loaded into the [iPad] bookshelf.
• The chance meeting with another iPad project being undertaken at the Kimberley remote school as discussed in the PD workshop section could lead to collaboration and assistance with the intention of developing further innovative iPad technology. The language app is part of a group of applications being developed by Dr Alistair Campbell from Edith Cowan University to support and sustain local culture within remote Aboriginal communities. The apps are designed and developed through collaboration with AEWs and are based on learning materials currently used in their classrooms. For example, the Remembering Places app (nearing completion) could be used to support ‘Learn on Country’ community activities. This app is designed to record authentic text, images, video, etc. in English and local language about culturally significant sites using a map of the area and interactive buttons. The app has much potential for further use to upskill AEWs who may wish to use it as part of the school’s teaching programs and for them to participate in the teaching and learning activities in an effective manner. Further research on these programs in upskilling AEWs should be considered.

Reflection on processes and procedures
As noted earlier, one of the strengths of using design-based research is that the approach can be adapted and changed ‘on-the-go’ to adjust the environment and potentially to improve learning outcomes. This affordance was used to great effect in the project. Nevertheless, reflection on the processes, procedures, and the overall approach, has revealed some insights into how the project might have benefitted from more streamlined methods and more realistic timing allowances from the beginning. For the benefit of researchers who might be conducting similar projects, the following suggestions and cautions are offered:

• Ensure that access to web-based services is carefully planned. Even when brand new devices were set up with clear printed instructions and one-to-one support, impediments presented themselves, such as participants forgetting that they had already set up accounts, or forgetting passwords. For more streamlined device set-up, ensure that participants come prepared with account names and passwords.
• Allow sufficient time for obtaining ethics approvals, particularly when working in schools and across sectors.
• Provide access to a project website for all participants very early in the project. Even though a Learning Management System was used in the project, the project website could have been used as a central reference point and for early publication of outputs and stories as they were produced.

Project dissemination
In order to effectively disseminate the progress and findings of the Skilling Up project, the team has used a variety of strategies. Throughout the two year project, feedback from participants and their principals was continual and proved an invaluable source for reflection for the project team. The team designed and printed posters to raise the awareness of the project as well as postcards that were given out at every networking opportunity that was presented to the team members.
Dissemination has included the writing of three publications still awaiting finalisation for submission to high impact journals, conference presentations in Australia and internationally, and a *Skilling Up* website. The project team has to date delivered presentations at the following conferences (see full details in Reference List):

- *Australian Association for Research in Education* (AARE) 2014 – Brisbane.
- *Australian Association for Research in Education* (AARE) 2015 – Fremantle.

The project leader has disseminated information regarding the *Skilling Up* project at:

- Two meetings with Jacqueline McGowan Jones, Executive Director, Office of Aboriginal Education, West Australian Department of Education, to discuss the project and strategies for an internship proposal for AEWs wanting to study education degrees. Posters and postcards distributed.
- The annual Aboriginal Teachers forum led by the Department of Education in Western Australia also provided the project with a space to network with Aboriginal teachers and AEWs. Posters and postcards distributed.
- Nyungar network meetings provided the space that enabled further dissemination and discussion around the *Skilling Up* project. Posters and postcards distributed.
- In every school the project team visited *Skilling Up* posters and postcards were disseminated.
- The establishment of a *Skilling Up* Facebook page.

Pending dissemination strategies for 2016 include:

- Proposed seminar to School of Education staff from both the lead and partnership universities, and the *Western Australian Institute of Education Research* forum. The purpose of the seminar will be to disseminate the findings and recommendations from the project.

Website maintenance and dissemination:

- The project website will be maintained and enhanced through the addition of further stories and products from future related work.
- Principals and participants in the project (and future related projects) will be advised and reminded of the site and encouraged it to use it for educational purposes.
- Dissemination of the website as a resource can be enhanced through its publication in conference and journal papers, links from the Schools of Education and researchers’ own websites and university profile pages, and links from university Indigenous Centres (such as Kulbardi and Kurongkurl Katitjin).
In conclusion, this report has discussed in detail the *Skilling Up* project – *Improving Educational opportunities for AEWs through technology based pedagogy*. Over the course of two years, we have travelled many kilometres within many Aboriginal *Countries* to work with Aboriginal Education workers (AEWs) to upskill and assist them with iPad technology at both a personal and professional level.
Appendix A

Certification by Deputy Vice-Chancellor (or equivalent)
I certify that all parts of the final report for this OLT grant/fellowship (remove as appropriate) provide an accurate representation of the implementation, impact and findings of the project, and that the report is of publishable quality.

[Signature]
Name: ................................................................. Date: 2/2/2016
Appendix B

Two-week PD module for in-service and pre-service teachers

The aim of this module is to engage pre-service and in-service teachers with effective strategies when working alongside AEWs in classroom. We are using the term AEWs (Aboriginal Education Workers) as all over Australia different education sectors use different terminologies when referring Aboriginal workers in class. *You will need to know the name your sector utilises.

**Introduction to the module**
- Aboriginal Education Workers (AEWs) various sectors have different names
- What do I need to know, think about and do as a teacher?
- More importantly how will I work with the AEW in my classroom/school?

**Roles of AEWs**
- Week 4 reading is Chapter two - Intended curriculum, standards, literacy and numeracy. Understanding who your students are (Perso & Hayward, 2015).

**AEWs in the classroom**
- Where to begin?
- What is the Cultural Interface? Interface Theory (Nakata, 2007)
- The meaning of the word ‘Interface’. A contested space?
- Connect the notion of Cultural Interface.
- Tutorial/workshop around the cultural interface

**ICT and AEWs**
- ePortfolios
- Digital stories
- Teaching Apps
- Resources - What do AEWs know?

**AEWs, Community and Families**
- AEWs are often the link between families and school
- To begin to understand who our students are, we need to also ask ourselves again. Who am I?
- What is my story? What are my values and beliefs?
- What is in my name? Where does my family come from?
- Where do you live? How does the area where you live look like? What is the land around you used for?

**Stories from AEWs**
The approaches adopted in this PD module consist of readings and workshop topics which participants can discuss in detail to understand the work of AEWs. This module is amenable to implementation in other educational institutions and locations.

The rationale for the professional development workshops took the form of regular *yarning* sessions with the AEWs in the *Skilling Up* project — all of whom worked collaboratively, reflecting and sharing ideas and experiences on a regular basis in order to find new ways to share what they do with in their roles as AEWs with pre-service and in-service teachers. As such, this was a ‘group learning process’ in which ideas regarding Aboriginal education, Aboriginal students and importantly racism were discussed to develop this “Building Relationships with AEWs — what teachers need to know, think about and do” module. We are now in the trialling phase so that it can be evaluated and refined through all phases in an ongoing cyclical process.

In this way, the *Skilling Up* PD workshop model is one that any university or institution could readily adapt because it uses existing human and other resources to implement an educational wide solution for pre-service and in-service teachers to understand the issues AEWs experience in their roles and importantly this module gives a platform to discuss more broadly the topic of Aboriginal education.

Thanks to Dr Audrey Fernandez -Satar and Ms Vivienne Little and all the AEWs who have contributed to the making of this module.
Appendix C

Skilling Up professional development unit guide

Learning new teaching and learning skills with iPads

Introduction
Thank you for joining the Skilling Up project.
This project will explore new ways to create opportunities for Aboriginal Education Workers like you! We also want to find out from you the way you see your role.
Your involvement in the project will give you the opportunity to use iPads to learn more about ways to use technology in your school and classroom. And it might lead on to new career and educational opportunities as well.
We hope that as you learn, you will very much enjoy working with the iPads, with each other, and with us.
We are really looking forward to working with you!

What will I do in the project?
In the project, in addition to exploring your role as an AEW, you will create useful teaching and personal projects. These will include:

1. The creation of a website on the iPad (which you can possibly use later as an e-Portfolio for your career)
2. The writing and presentation of a digital story on the iPad
3. The creation of a one-to-one teaching activity on the iPad (including the use of an educational app with a student)

You will attend a workshop to get started, then over the next few months, you will work on these projects back in your school to learn more about using technology in education (more about these tasks later!).

Project team details
Project leader:
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What happens in the first workshop?
The iPads are an important tool that will help you to create your stories. As you plan and then write your story, you will use the iPad to help you create something really special. You can use it to record your ideas, to take photographs, to create voiceover for the scenes if you want to, to edit and then add titles to your story. In fact, you should be able to do everything on your iPad!

So, in the workshop you will:
1. Talk about your role in your school
2. Receive an iPad and set it up so you can use it in the workshop, and back at your school
3. Download two of the apps that you’ll need for the tasks (Weebly and EduCreations)
4. Make a small sample website on the iPad
5. Make a small sample digital story on the iPad
6. Join the project website.

What do I do once the first workshop is over?
At the end of the workshop, you will take the iPad with you back to your school. You will do three tasks over the next few months and share them with the project team and with each other (that is, a website, a digital story and a one-to-one teaching activity). When we meet for the second workshop, you will need to have created your website and have completed a storyboard or a first draft of your digital story.
We hope to have another workshop towards the end of the project where we can share our stories and ideas, and further develop ideas for the ePortfolio.

What support will I have to complete the tasks?
There will be lots of support for you, such as:

1. Your Principal at your school: he or she will help out where possible
2. The project team: we will be in regular contact
3. The project website: we will show you how to join the project website that will have lots of ideas and support on the tasks you are doing. You’ll be able to:
   a. Participate in project activities
   b. Send updates of progress
   c. Ask questions, give answers, talk to others about their stories
4. Each other: there will often be another AEW in your school for support, and you can contact all the participants through the project website.

What are the tasks?

Task 1: The website
The first task that you will complete on the iPads is the creation of a website that can be used both to compile and present all the products of the project, but also possibly as an ePortfolio for educational and professional purposes.

The first task will involve:
• Downloading the Weebly app to the iPad
• Creation of a Home page and About me page (including text and images)
• Creation of two web pages to be used for the remaining tasks (the digital story and the teaching activity)
• Creation of one additional web page for use as a general portfolio and to collect teaching resources

Once you have set up the website on your iPads using Weebly, you will be able to use it as a platform for all your unit products and other resources into the future.
Skilling Up Unit guide

Weekly on the iPad (pic from www.itunes.apple.com)

Screenshots

Task 2: The digital story
The second task in the unit is the writing and creation of a
digital story. The story will be written about something that is
meaningful to you, and one of three very broad topics can be
selected as the focus for the story:

1. My PLACE (country, home, school, etc)
2. My PEOPLE (close family, distant family, a special
person, etc)
3. My STORY (traditional, modern, made up or real)

During the face-to-face workshop, you will be able to make a
very small, practice story on the iPads, but the real story will be
developed after you return to your school.

We will use an app called Educreations for the stories.

Educreations on iPad (Pic from www.itunes.apple.com)
Creating the story will involve:

- Downloading the Educreation app to the iPad
- Choosing and brainstorming a topic
- Creating a storyboard or plan for your story
- Compiling images, maps, and text
- Creating and telling the digital story with voiceover
- Uploading or linking your digital story to the website you created for your story in Task 1.

Educreations has all the features you need for the creation of a digital story, and it is simple and quite easy to use. The only problem is that the output of the app is called a ‘lesson’ rather than a story, but we will all know that it is your story.

Nevertheless, the use of this particular app may have benefits in that becoming familiar with such a product will be useful for your future classroom use of the iPad with students—when you do create lessons.

Task 3: The teaching activity

The final task in the Skilling Up project will be the design of a teaching activity using the iPad that can be used with students in classrooms, such as on a one-to-one basis.

There are many educational apps that enable children to master basic skills (such as a range of mathematics apps shown in the picture below).
The quality of these apps varies considerably, so the third task will require some evaluation of apps prior to selection.

The third task will involve:
- Selecting an area of interest in literacy or numeracy
- Searching the iTunes app store for suitable free educational apps
- Downloading several apps to review
- Selecting the app to be used
- Creation of a lesson activity to be used with a student, that is, a mini lesson plan of how the app can be used
- Implementation of the lesson with a student
- Presentation of the lesson plan in your website (on the webpage created for the teaching activity in Task 1) in a form that other AEWs will be able to use the lessons themselves. This can easily be done by answering questions such as:
  - What app did you choose and why? (include pics of app and classroom environment)
  - How did you use it?
  - What were its strengths and weaknesses?

**Additional resources and the ePortfolio**

During the project, you will be able to further develop and share your website progress as you wish. You will be able to add and organise additional teaching resources, apps and other lesson ideas and stories that you make.

In the second workshop, we will explore ways to take your products and add them to your website to make an ePortfolio for professional uses.

**What about after the project?**

The tasks and activities you create in the project are equivalent to a first year university educational technology unit. You will receive a completion certificate, and you should be able to claim recognition of prior learning (RPL) for this if you decide to start a teaching degree in the future.
Appendix D

Evaluation report by Associate Professor Karen Trimmer


Improving educational opportunities for Aboriginal Education Workers through technology-based pedagogy

Prepared by Associate Professor Karen Trimmer, University of Southern Queensland

Project and Evaluation Design

The Skilling Up project commenced in February 2014 and is funded for two years. The project methodology takes the approach of design-based research methodology informed by Indigenous research theory. This OLT project has been developed with the aim of improving the educational opportunities for Aboriginal Education Workers in schools. Aboriginal Education Workers have been employed in Australian schools since the 1950s, in Western Australian schools since the 1970s, and have undertaken a range of significant roles. However, persistent educational gaps remain for Aboriginal students in achieving educational outcomes that meet their potential and it is anticipated that technology-based pedagogy can provide a sustainable way for AEWs to influence improvement in outcomes for their students.

Ethical guidelines for the conduct of research involving Aboriginal & Torres Strait Islander people have been developed by the National Health and Medical Research Council (NHMRC) and Universities Australia (UA). The design of this project has taken account of these guidelines and of research literature establishing best practice in conducting research with Indigenous people and communities. There is a focus on empowering participants and in ensuring that Indigenous people have ownership and control over the research. The project team includes two Indigenous academics, one of whom is the Project Leader. In addition, a reference group of Indigenous academics from across Australia has been created to provide high level advice and feedback on the project.

The design-based approach was selected to increase the relevance of the research for both praxis and practice, with emphasis on improvement of practice through evidence based education. To this end design research specifically includes formative evaluation the results of which can then be included in an iterative approach to the development and design of interventions and the research process as part of a cumulative cyclic process. There is some overlap and synergies in this approach with traditional empirical cycles of hypothesis testing (Gravemeijer & Cobb, 2006). However, in design research the research team uses the results of each iteration of testing to revise learning goals or activities, to develop specific interventions or otherwise adapt the learning process to improve both the underlying instructional theory and its outcomes. This approach has been adopted by many researchers in the area of educational technology (Reeves, 2006) due to opportunities it presents to improve the design of curriculum instruction, interventions, or professional development facilitation (McKenney, Nieveen & van den Akker, 2006). Interestingly, the design researchers themselves can take on dual roles as research designer and as evaluator. In this study, whilst the researchers will have these dual roles there is also an independent evaluator who is not part of the research team. This allows
another objective perspective to both the formative and summative components of the evaluation, and also allows the participants to interact and respond in ways that may differ to their interaction and response to the team delivering the design research project. Such independence assists with validity.

This evaluation has taken the approach outlined by Reeves and Hedberg (2003) specifically designed for technology orientated design-based research projects. There are six functions of evaluation included:

- Review,
- Needs assessment,
- Formative evaluation,
- Effectiveness evaluation,
- Impact evaluation, and
- Maintenance evaluation

(Reeves & Hedberg, 2003)

To date, the first two of these evaluation components have been completed and the third, formative evaluation, is currently in progress. These three components are reported below. Data collection for the evaluation to date has included critical review of the planning and development phases including the literature review, and professional development framework model. As they are developed the pedagogical strategies, curriculum and authentic tasks will also be the subject of critical review. To ensure authentic evaluation of implementation components, the external evaluator plans to accompany the research team to a sample of the communities to engage participants to investigate the nature and effects of the interventions. Data collection for this phase will be conducted on site with a representative sample of participants and will include focus groups, interviews, observations, analysis of journals and weekly logs. The impact evaluation will be conducted at the conclusion of the project.

**Review**

Following agreement to undertake the evaluation in June 2014, the independent evaluator initially met with the Project Leader at the MATSITI Indigenous Educators meeting in Adelaide on 3-4 July 2014. A face-to-face meeting was held to meet the full project team at Murdoch University on 1 August 2014. Access was provided to all documents, including working documents, via DropBox, to enable a full documentary analysis.

A thorough review of the literature had been conducted by the team. This has included academic literature, government reports at Commonwealth and State level, WA Department of Education information, policy and reports. The academic literature has included studies focussed on the use of digital media and technology to mediate learning with Indigenous people and also in remote communities, studies of Aboriginal and Torres Strait Islander education, the roles of Aboriginal Education Workers and action research conducted and narratives from within Australian schools.

The reference group of Indigenous academics and key stakeholders had been established in March 2014 to guide the project.

Finding: The focus and scope of the planned project is consistent with the reviewed literature.
**Needs Analysis**

Based on the literature review the problem/objective for the project was established. A model was developed for the planned intervention in light of the objectives and the target group based around three themes; Enabling, Pathways and Understanding. The linkage of model developed to date to the literature has been clearly articulated. The application of the model to produce design principles and implementation of solutions in practice and resources will be determined as the project progresses.

Findings: The design-based research approach is appropriate to the focus and scope of the project. The approach is culturally appropriate and consistent with Indigenous research theory.

**Formative Evaluation**

**Communication:**

Regular monthly meetings are held and minuted with the full team from Murdoch University and Edith Cowan University attending. The evaluator has attended subsequent team meetings via teleconference and has met with Jan Herrington in Perth at Murdoch University. Actions are assigned for the required tasks in the minutes and followed up by the Project Leader.

**Dissemination:**

Dissemination activities have been planned. To date the Project Leader, Libby Jackson-Barrett, Graeme Gower and Karen Trimmer attended the MATSITI Indigenous Educators meeting in Adelaide on 3-4 July 2014. A symposium of four papers was presented at the 2014 Australian Association for Research in Education (AARE) annual conference held in Brisbane on 3 December, 2014. A publication arising from this conference is planned to be submitted to an appropriate journal. In addition, an abstract is being prepared for a paper presentation at the European Conference on Educational Research (ECER) to be held in Budapest in September 2015.

**Budget and timelines:**

In relation to the budget, the evaluator queried how technical difficulties experienced by AEW's would be resolved as this can be an area where budget can be stretched. The budget currently includes a budget item for employment of a technical support person to provide technical advice and support for 10 days per year. In addition Moodle support will also be provided.

Whilst Ethics approval had been provided by Murdoch University Ethics committee in July 2014, the process of obtaining approval from the Education Sectors in Western Australia was an issue for the project. Approval for stage 2 of the project was received from the Education Department on 16 December 2014 and from the Catholic Education Office on the 5 January, 2015. This delay in approval to contact schools has impacted on the planned timelines. In the interim introductory letters to principals and consent forms had been prepared and the survey questionnaire developed. The initial professional development module with the AEWs is now to commence on the 12 March 2015. This will include the Metro cluster, Geraldton and the Kimberley.
Recommendations from the evaluator on points to be covered in the first professional development sessions included:

- Assessment to be made of each participant's prior ICT experience and capability. If this is limited participants may require additional training in pre-requisite skills to enable AEW's to fully participate. A question was included in the initial AEW survey on prior use of mobile devices and need for training.
- Clear understanding of whether and how the AEW's can control the rate, sequence and other aspects of the intervention/instruction, and whether there is scope for AEW's to initiate unique or unexpected uses, either individually or in groups.
- Outline of the monitoring of use and record management that will occur so that participants start to produce sources of evaluative data. This will include a checklist of use made of the iPad and a weekly diary/journal entry.

Ethical Issues Arising:

A number of ethical issues arose in the negotiation of project approval with the Department of Education. These included:

- Recruitment of AEW's through the Department of Education requires principal approval to participation, with implications for anonymity and voluntary participation or withdrawal from the study.
- Department of Education in negotiating approval, indicated preferences for regions to be included and excluded. This involvement in selection of schools would have significant implications on the anonymity and the validity of the sampling frame. The project team subsequently requested Expressions of Interest from schools and clusters of schools were selected based on this feedback circumventing the selection issue by the Department and adequately resolving this issue.

Next stages of evaluation

The initial survey of AEWs, principals and Indigenous academics has been conducted through Survey Monkey. The response rate achieved was acceptable with 31 AEWs, 51 principals and 5 Indigenous academics responding. The results indicated a number of common themes including confidence, self esteem and communication. The team will ensure that these issues are incorporated into the planning for the module in development.

At the next team meeting in February the evaluator will discuss with the team the measures of individual participant progress, use of the iPads and how it has assisted with their AEW role. The project team has currently developed draft interview questions to be used. The intent is to use non-scheduled standardised interviews (Denzin, 1989) using qualitative questioning techniques for individuals and groups, with questions focused on the following areas:

- Participants’ views on the use of ICTs in the school/classroom, including the technology affordances of mobile devices
- Participants’ response to the professional development needs of AEWs to enable leadership roles in the use of ICT in the classroom.
- The pedagogical strategies that participants believe facilitate the use of mobile learning devices in authentic Indigenous learning environments.
- Participants' views on the means by which AEWs roles could be enhanced through greater knowledge of and use of mobile devices in educational contexts.
Measures will also include how participants feel about use and their involvement in the project, and also their future expectations. The evaluator intends to accompany the team to the second round of cluster PD sessions to collect data directly from participants through interviews.

The emerging findings of the evaluation will be included in an iterative approach to the development and design of the interventions and the design-based research process as part of a cumulative cyclic process. The project team will use the results of each iteration of testing and the evaluation findings to revise learning goals or activities, to develop specific interventions or otherwise adapt the learning process to improve both the underlying instructional theory and its outcomes.

The Effectiveness and Impact components of the evaluation will evolve throughout the project. For a valid and reliable summative assessment of the impact outcomes of the project and their sustainability, ideally this measurement needs to occur one or more years after the innovation has been fully operational. For this reason it will be left to the end of the project.

References


Improving educational opportunities for Aboriginal Education Workers through technology-based pedagogy

Evaluation to be inserted in final version
Appendix E

References


The National Assessment Program – Literacy and Numeracy (NAPLAN)
http://www.nap.edu.au/naplan/naplan.html


