New tools for old hands: ePortfolios for career and professional development in remote education workforces

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Abstract

Increasingly, federal government policy has dominated the way public education agencies perform and execute their responsibilities. This has been most acutely felt in the Northern Territory (NT). Under the Quality Teaching Package and Enhancing Literacy measures of the Closing the Gap in the Northern Territory National Partnership Agreement, the Australian Government has committed $44.3 million over three years (2009/10 to 2011/12) to Northern Territory education providers to develop career pathways for Indigenous[1] staff, increase the number of Indigenous staff with education qualifications and provide support and programs to enable teachers and students achieve improved outcomes in literacy and numeracy in 73 targeted remote communities. By presenting the outcomes-to-date of a suite of projects conducted with the Northern Territory Department of Education and Training over 2010, this paper describes and demonstrates the potentially significant role that ePortfolios can play in the continuing education of remote education workforces. The discussion considers both the opportunities and challenges for remote learners/employees, vocational education and training (VET) providers and public agencies considering the adoption of ePortfolios for career and professional development.

Background and significance

Indigenous teacher education programs have been offered by the Batchelor Institute of Indigenous Tertiary Education (BIITE) (or its predecessors) for over 35 years. Aboriginal Assistant Teachers (remote NT nomenclature) (Northern Territory Department of Education, 1999), are employed by the Northern Territory Department of Education and Training, local School Councils, Catholic Education Office or NT Independent Schools. Assistant Teachers (ATs) employed by NT DET numbered 299 in 2010 (Northern Territory Government, 2010), covering an area from the Tiwi Islands in the north to Finke in the south, and Lake Nash in the East to Kintore in the west. Approximately 150 ATs (Grace, 2010) are currently enrolled in one or more of the new qualifications, or in the final stages of completing their Certificate III in Education Work across the Northern Territory. Issues for Registered Training Organisations (RTOs) and NT DET in meeting the professional development needs of ATs include insufficient funding, geographical spread of schools, small numbers of ATs in discrete locations, individual student circumstances, poor English literacy and numeracy skills, poor access to information and communications technology, the need to work around school timetables, school management and teaching staff turnover rates. These have in turn had an impact on students' capacity to complete their studies

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[1] Officially, the term 'Indigenous Australians' refers to Aboriginal peoples from both mainland Australia and the Torres Strait Islands, however, many Indigenous people prefer to use 'Aboriginal' or their nation name.

and/or engage in pathways to higher levels of study (Northern Territory Department of Education, 1999).

Cultural and organizational change in NT DET has been significant in recent years. This change has occurred largely as a result of the policy environment created both nationally and locally in the aftermath of the release of the *Ampe Akelyernemane Meke Mekarle* "Little Children are Sacred" report (Northern Territory Government, 2007). A number of strategies and associated outputs under the Closing the Gap National Partnership Agreement (Australian Goverment, 2009) Schedule 1 (Enhancing Education) and the National Partnership on Improving Teacher Quality (Australian Government, 2008b) have relevance to the Indigenous ATs, namely the:

- development of Professional Standards;
- development of workplace-based professional development packages;
- provision of site-based support for remote Indigenous people to be able to complete educational qualifications; and,
- building of professional pathways for Indigenous people and ATs who wish to become classroom teachers.

These National Partnerships and the release of Northern Territory Government (NTG) initiatives 'Working Future' (Northern Territory Government, 2009b) and 'Territory 2030' (Northern Territory Government, 2009a) prompted NT DET to undertake a consultation with all school stakeholders to identify ways to improve Indigenous staff professional development in Northern Territory (NT) schools. The key recurring themes that emerged from this consultation were that:

- any delivery needs to consider the specific training needs of a small, geographically dispersed audience cost effectively; and,
- there is a need to develop a workplace-based training model with enhanced flexibility through the use of technology.

In 2010, NT DET commissioned a research team from Charles Darwin University (CDU) to explore the potential of ePortfolios to meet these needs as they have the capacity to:

- safely store and present evidence online (in a range of digital/multimedia formats) of all knowledge and skills, regardless of where, when and how it is acquired;
- aggregate and present evidence for formal assessment purposes, including the Recognition of Prior Learning (RPL);
- aggregate and present evidence for demonstrating performance against Professional Standards and for employment applications;
- improve communication between peers, assessors and other audiences; and,
- support professional development planning and lifelong career development (Joint Information Systems Committee (JISC), 2008).

Literature review

Issues for career and professional development of Indigenous Assistant Teachers

Indigenous Assistant teachers are frequently the longest serving members of the school staff, they are usually recruited locally, providing a link to the community,

making them essential not only for continuity but for inducting new staff and mediating the cultural distance between the non-Indigenous teachers and the local students (Northern Territory Department of Education, 1999). Much anecdotal evidence exists to suggest that ATs have a vital role to play in Indigenous education (Harper & Hallenstein, 2009; Winkler, 2006). At one level, ATs can help to address the so-called 'crisis' in educational continuity in the NT, due to factors that include high rates of teacher turnover, low attendance rates, high student mobility, low levels of English literacy and disruptive socio-cultural issues arising in communities. But, as a central aspect of ATs work, the task of "cultural mediation" rests on number of assumptions about the value of Western discourse/education in Indigenous settings, while also requiring that ATs themselves have significant grounding in such discourse and related pedagogy (Cooper, 2008).

Yet the ATs own professional development has faced an 'identity problem', not helped by the fact that their jobs are often open to local and regional interpretation by any number of competing interests including students, parents, community leaders and elders, principals, teachers and government departments. Quite often in the classroom ATs are relegated as translators only, or as responsible for behaviour management and menial clerical duties (Cooper, 2008; Warren, Cooper, & Barturo, 2004). Clear and meaningful roles for ATs will allow them to contribute more effectively, and, better guide their needs, desires and access to professional development.

However, in relation to the formal training that is available for ATs, a key finding in research undertaken by Harper and Hallenstein (2009) was that teachers are often willing to support ATs in their training, but current flexible learning models fail to give them an adequate structure for doing so and do not recognise competing demands on the time of both parties. They also report that there is often little communication between classroom teachers and the vocational education and training (VET) trainers. This in turn means that the ATs are unsure how to implement what they are learning with the support of the teacher, and the teachers for their part have little idea of the sorts of tasks they can be handing over to the assistants (Harper & Hallenstein, 2009).

A learning organisation is one where "there is a shift away from the traditional training model of professional learning, to a model where learning is interlaced with work and is used to achieve continual improvement. To this end, professional learning must focus on key outcomes for NT DET and for the workplace and on building the capacity of individual employees to achieve these outcomes" (Northern Territory Department of Education and Training, 2007). As the role of ATs within this learning organisation change they need to be able to keep moving forward, regardless of changes to programs and strategies.

ePortfolios as a possible solution

The use of portfolios has a rich history in teacher education (Strudler & Wetzel, 2005). In their review of the initiation and implementation of ePortfolios they used both Fullan's (2001) and Hall and Hord's (2001) change theories as a lens for analysing the specifics of the change process. Fullan (2001) outlined three broad phases of the change process:

1. Initiation or Adoption – consisting of the process that leads up to and includes a decision to adopt or proceed with a change.
2. Implementation – usually the first two or three years of use, involving the first experiences of attempting to put an idea or reform into practice.
3. Continuation or Institutionalisation – referring to whether the change gets built in as an ongoing part of the system.

He also notes that the process is not necessarily linear but one in which events at one stage can feedback and alter decisions made at a previous stage. Both authors explain the difficulty of organisational change in educational contexts by suggesting that nothing will happen until individuals within it change, and that the culture of the organisation can present a major obstacle to implementing new ideas and practices. Fullan's (2001) *25/75 Rule for Educational Change* suggests that "twenty-five percent of the solution is having good directional ideas; seventy-five percent is figuring out how to get there in one local context after another". Strudler and Wetzel (2005) in their summary of the literature related to ePortfolio implementation, suggest for it to be successful, a horizontal or balanced approach to governing change dependent upon administrators' support and assistance in securing resources for support, training and an understanding of the change process, as well as the eventual "buy-in" from those who will be most involved in implementing the change is required.

ePortfolios offer potential for ATs to document a broader range of skills, knowledge and attributes than simply meeting learning outcomes and in so doing, can assist them to demonstrate continual improvement and their contribution to a learning organisation. The ability of an ePortfolio to support verification through reflection on professional practice allows people who may not have evidence or appropriate professional references to demonstrate competence. Multi-media technologies afford ePortfolios a range of benefits beyond those of traditional paper-based portfolios. Efficient and effective maintenance, storage and accessibility, ability to present and reflect on artefacts using a range of media and multiplicity of organisation are just a few of their characteristics (Boyle, 2009). Butler, in her review of the literature identified further benefits of ePortfolios over traditional portfolios, including ICT skill development, feedback and communication facilitation, fostering a sense of pride in one's own work, providing rich pictures of student learning and competencies, engaging students more in the assessment process and reduced costs of reproduction and the inclusion of privacy features (Butler, 2006). ePortfolios can provide a better understanding of the learning that is required, of the work environment in which the learning is taking place, and ultimately improve the learning experience for ATs, their classroom teachers and VET trainers. However, very little is known about their application in the context of Aboriginal learners (Boyle, 2009), or their implementation in organisations.

The project

Implementation

NT DET commissioned a team from Charles Darwin University (CDU) and The Work Lab (www.theworklab.com.au) to develop and trial an ePortfolio that would meet the diverse needs of ATs, Registered Training Organisations (RTOs) and NT DET. For the ATs, the ePortfolio had to provide a lifelong tool to document their

knowledge and skills, to recognise their knowledge and skills against formal qualifications in the Australian Qualifications Framework (AQF) and the draft Professional Standards for ATs, and, it needed to be accessible, regardless of their level of digital literacy. The ePortfolio also needed to provide a safe electronic filing cabinet or repository for personal reflection, planning and goal setting, communication and/or collaborative learning. The contents also needed to be able to be repurposed for presentation for employment, promotion or accreditation in addition to any assessment purposes. Trainers and assessors employed by RTOs operating in the NT required the ePortfolio to clearly demonstrate competency and be capable of meeting the audit requirements of the Australian Quality Training Framework (AQTF) (http://www.nqc.tvetaustralia.com.au/aqtf). For NT DET, it needed to show and record progress towards any endorsed Professional Standards for ATs, and be suitable for either or both career development and Recognition of Prior Learning (RPL) purposes.

The ePortfolio was also required to have the capability to expand to suit the broader NT DET Indigenous education workforce, including school-based auxiliary staff, early childhood and Indigenous teachers upgrading through training for full teacher registration. The chosen ePortfolio had to be interoperable with the existing and projected NT DET information and communications technology (ICT) architecture that included a Moodle learning management system and a media server. It also needed to be constructed to support migration to NT DET's preferred hosting partner after development. It had to be sustainable, allowing updating by NT DET in the future with sufficient access to a range of training/help guides and the capacity to support an independent help desk.

In order to meet the complex and different structures and expectations of these stakeholders, Mahara, an open source ePortfolio (http://www.marhara.org) was chosen by the project team for its ability to be customized, its interoperability with a broad range of applications, and, its data export capabilities.

The CDU project team members designed the ePortfolio (given the name ePIE - Electronic Portfolios for Indigenous Educators), delivered the information and professional development training sessions across the Northern Territory to ATs and other school based staff, and, worked alongside regional NT DET staff and RTOs who were undertaking the training and assessment. The Work Lab customised Mahara to develop ePIE and integrated 'RPL Online', a web-based RPL support tool with the ePortfolio. The NT DET project management staff arranged internal information and promotion sessions. An ePIE Ning site (www.ning.com) was created to share stories from the project team and other NT DET support staff in relation to the development and implementation of ePIE. Over twenty-five ePIE professional development and access workshops in Darwin, Alice Springs, Tennant Creek and across remote regions in the Top End and Central Australia reached over 150 ATs, regional NT DET staff, RTO trainers and assessors.

The potential for ePIE to service other workforces within NT DET was realised with school-context content developed for the TAA40104 Certificate IV in Training and Assessment (for teachers), BSB30407 Certificate III in Business Administration (for office workers/administrators) and CHC30108 Certificate III in Community Services Work (for other school-based para-professionals).

Design

ePIE incorporates webpage components to create a more welcoming interface and to encourage ATs to feel a sense of ownership over the ePortfolio and content. The ePIE home page (Figure 1 below), is organised into four areas:

- My Place, a scaffolded entry point for those who are not yet ready for uploading files into a repository for assessment (or other purposes).
- My Learning Stories, which lists all the skills and knowledge required to complete a qualification and is a place to download information about assessment, including templates and examples, and upload assessment items.
- My Resources which contains the ePIE user guides and other useful web-based resources. And,
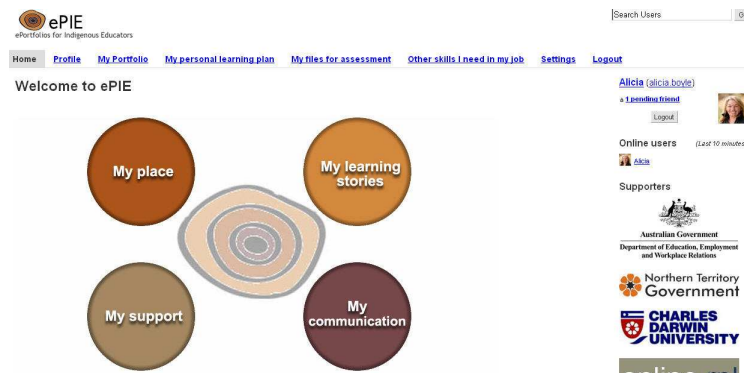- My Communication which supports networking between ATs and their mentors.

Figure 1: ePIE Home Page

The project team wanted ePIE to be driven by a Personal Learning Plan (PLP). This would help to ensure that ATs were much more in control of their learning and professional development futures. With an electronic PLP, progress could more easily be visible and supported by other staff in the school environment. The PLP is accessed from 'My Place' together with the ATs ' Profile Page', self-assessment checklists against the domains in the Australian Core Skills Framework (Australian Government, 2008a), including digital literacy proficiency and access to their 'My Photos' view in their ePortfolio.

Given that draft Professional Standards for ATs had been prepared to both reflect their work in and around schools, and, that these could ultimately be used to manage career progression, we elected to use these as a base to develop and present information within the ePortfolio. Four overarching work areas were reflected in the draft Professional Standards, and named as; workplace communication, work with others, teaching and learning and being a professional. The work-based tasks developed for the qualifications (CHC30808 Certificate III in Education Support, CHC41708 Certificate IV in Education Support and CHC51308 Diploma in Education Support) were then mapped into these work areas, and finally to each Unit of Competency. Templates were attached to each task/activity to assist with completing assessments if an AT did not have any alternative form of evidence already available. And, for a number of activities, samples of evidence using a range

of digital formats were sourced to provide additional ideas for presenting evidence for assessment.

Once an AT has uploaded a file into their ePortfolio they wish to use as evidence for assessment, they can upload it to the My Files for Assessment area. Once selected, the file enters the 'RPL Online' repository and can be opened and assessed online (or printed), and feedback provided, by their RTO assessor into their ePortfolio. 'RPL Online' can also provide any number of reports required by the RTO for AQTF compliance when required.

The approach taken with view and content development for the other qualifications was similar, in that units were clustered in views according to logical work-based tasks/suggested co-delivery and assessment. Templates were provided for each assessment task and additional resources/information to support the tasks included in the view.

Review

Monthly documented meetings and weekly email exchanges between the development team and the NT DET project management staff enabled evidence to be gathered about the opportunities and challenges identified centrally for implementation. Unstructured interviews with six NT DET regional staff in the Central Australia and Barkly regions of the NT over six months provided information about regional considerations for implementation and, were a valuable source of information shared with them from principals, teachers and ATs. Two visits to each of 12 schools in these regions were undertaken and provided opportunities for principals and/or senior teachers to share their views. Four RTO trainers/assessors provided valuable and ongoing insights and 40 ATs shared their opinions about the opportunities and challenges for implementing ePIE during the training sessions held.

Findings and discussion

What opportunities does the ePIE solution offer?

For remote learners/employees an ePortfolio solution offers them safe storage and easy retrieval of a vast range and types of artefacts that they can use for work, assessment and accreditation purposes. With the relative scarcity of safe storage spaces in their homes, this was much welcomed by the ATs. Although only a handful of ATs have access to computers and the internet in their own homes, access is available in the school. The ability for ePIE to accept a range of digital media, and its ability to hyperlink to other sources of information on the web, including retrieving content from external Web 2.0 host sites, has provided the impetus for ATs to improve their level of digital literacy. They found being able to create MS PowerPoint presentations and digital stories with text and narration in their first language and English for both assessment purposes and classroom use particularly empowering. Working and learning as a group allowed them to critique each other's work and reflect on their own. With a range of new skills and an increased confidence in their job roles as a result of the interest and investment in their professional development, many teachers commented on their ATs improved ability to work in teaching teams.

ATs using ePIE had more regular communication with their VET trainers/assessors and regional NT DET support staff. There was more timely access to course information and feedback on assessment. Given the previous inconsistency of visits by VET trainers/assessors these features were greatly appreciated by both ATs and their school-based support staff. Many made their views accessible to other ATs both in their community and elsewhere, and although they have yet to take advantage of the opportunity to use this ePIE feature, they have identified the potential for collaborating on projects and getting feedback on their work from ATs residing outside their community. For remote Indigenous Teachers upgrading their qualifications for Teacher Registration purposes, ePIE provided a space to organise their workplace evidence, reflect on their professional development, and then prepare it for presentation to a panel in Darwin. Importantly, the ePortfolio and associated investment made in staff to support its implementation, assisted to support the completion of a higher number of qualifications and units, and provided efficient transition to higher level qualifications. The greater flexibility in the type/nature of evidence provided for assessment and the lesser reliance on written English for all assessment purposes was welcomed and embraced by the ATs, contributing to the increase in completions.

For VET providers ePIE provided increased access to students, particularly those working in remote communities. There was a greater opportunity for timely communication and feedback to students and an increased efficiency in assessment as evidence could be accessed as soon as it was made available to view. Although still awaiting full implementation, the use of the 'RPL online' feature will allow for increased efficiency and standardisation of assessment, and the access to a full range of supports for AQTF audit requirements. ePIE contributed to increased completions, increased transition to higher level qualifications and new enrolments.

For NT DET ePIE improved access to quality professional development for employees, and through its use, their improved capabilities. In addition, ePIE will support the efficient reporting against the Professional Standards, once endorsed, for accreditation and promotion purposes. There is also the opportunity to further extend ePIE into other workforces in NT DET. The inclusion of the TAA40104 Certificate IV in Training and Assessment (or in the future, Certificate IV in Training and Education) provides access to professional development opportunities for other staff in the school to assist them to support ATs in their learning.

What challenges does the implementation of ePIE present?

For remote learners/employees the challenges for implementation vary, and are, for the most part, dependent upon the learning culture in their school. Principal support for their on-going professional development, mentoring and active engagement by their classroom teacher in their learning is critical. The workplace needs to provide opportunities to support the use of the ePortfolio by linking daily practice to professional development and to support the collection of existing evidence that could be used for RPL purposes. An understanding of VET and the needs of Indigenous adults as learners would certainly assist the ATs and support the relationship between the school and the RTO. Dedicated web-enabled computer workspaces/learning spaces that ATs can access whenever they are able are important for ePortfolio implementation. Access to and knowledge of the use of digital cameras, headsets,

video cameras and scanning devices is also important for the creation of evidence/artefacts for ePortfolios and for their job role. Ideally, other staff in the school with knowledge of and proficiency in the use of the ePortfolio and associated technologies need to provide this support, assisted by remote/online support. ATs need regular dedicated time within work hours to undertake their professional development. Many will need support to continue to develop their English literacy and numeracy, and levels of digital literacy, in order to complete higher level qualifications and to perform in job roles associated with the completion of those qualifications. They will need support to develop skills to improve their ability to reflect on their learning journey, in on-line collaboration and through a combination of support (including the PLP), become more self-directed in their learning.

For VET providers the most immediate challenges to the successful implementation of ePIE is their knowledge and confidence in the use of ePortfolios and associated technologies. Also, most have little knowledge of how to confidently assess digital evidence against the necessary requirements for competency. Although originally imagining the design of ePIE from a workplace perspective, its current use is being driven by the trainers/assessors who have had difficulty navigating its content in this style. Although still early in its implementation, it appears that until workplace-based learners are more self-directed and knowledgeable about the language of VET, and, VET trainers/assessors more confident in the use of ePortfolios, view design and content will need to be unit, rather than workplace task/activity based. The implementation of ePIE continues to require VET trainers/assessors to engage regularly with school-based staff to determine how the formal learning and workplace activities can be better coordinated for assessment purposes. Currently, if elected to use, 'RPL online' provides weekly alerts to trainers/assessors to advise them when new evidence has been uploaded for assessment, however, opening ePIE will need to become as automatic as opening their email to support regular communication and feedback to students. As this is not an institutionally-based system, RTOs will need to work closely with NT DET to maintain a collaborative on-going monitoring and development role to ensure ePIE's currency and useability.

For NT DET the challenges for implementation are broad. There is a need for both head office and regional/remote champions to continue to support ePIE's implementation and future development and to provide the necessary support structures in the field. Regional/remote staff in coaching and support roles need sufficient knowledge to be able to effectively use ePortfolios and have the technology skills to be able to assist in the construction of valid evidence from/in the workplace. In order to be able to do this, they need both experience in working in remote school settings, and, the necessary skills and knowledge to support VET learners. ATs, teachers and schools need to be supported to develop a local learning organisation. This will need the allocation of time and the necessary resources for it to become a reality. For successful implementation, funding needs to be secured and allocated for the necessary ongoing development, support, monitoring and evaluation of the ePortfolio over a minimum three to five year period. Decisions need to be made as to who is going to undertake the ongoing development of ePIE and, it if is to be done within NT DET, necessary arrangements would need to be make with RTOs to ensure alignment with their needs for assessment, and, the skills to undertake the development within the Department, identified. It is important that ePIE does not just get 'parked' in the ICT division rather it needs to be embedded within a workforce

development framework. ePortfolios are not like a software program to be accessed when needed for a specific task, they need to be regularly reviewed and updated by the 'owner', and depending on their use, responses given to communication and collaborative activities. Information needs to be shared across departmental silos so that ePIE is recognised, understood and used by those with all those whom the ATs need to interact. Migration of ePIE from the development server to the NT DET host and server has yet to go live. Discussions continue about such aspects as, where it should 'reside' and how it should be accessed within the greater ICT infrastructure of the Department, how it might integrate with their existing Moodle Learning Management System and Mahara ePortfolio and, how the help desk will be offered and managed. Simultaneously, decisions need to be made about its longer term future, policies and strategies for its adoption need to be developed if ePIE is to move from a trial/pilot phase within a division to be accessible to the entire NT DET. There will also be the need to develop a new web entry portal to accommodate a greater number of workforces within NT DET if it is to be more widely adopted. Expertise will need to be developed within NT DET to assess digital portfolios of evidence against Professional Standards for both ATs and Indigenous teachers requesting full teacher registration. Managing the size of the server/s required to host all the ePortfolios that could potentially be created will require ongoing review and consideration will need to be given to if/how the data is going to be exported and provided to individuals when they are no longer NT DET employees.

Conclusions

Remote learners/employees, VET trainers/assessors and NT DET have agreed that ePIE can provide solutions to their needs, however, it is too early to confirm whether ePortfolios will be embedded in the learning culture of the organisation. Trialling the implementation of ePIE has provided foundations for broader adoption, but more time is needed to evaluate its design, features, content and usability from the perspective of all stakeholders. Its success to date suggests that it is time for NT DET to consider the necessary policies and strategies required for adoption, and this will require the associated planning for on-going development and collaboration with RTOs, training, support, communication and technology infrastructure. If NT DET, as a significant purchaser of VET does implement ePortfolios for supporting the career and professional development of its staff, VET trainers/assessors will likewise need support to increase their knowledge and confidence in their use, particularly as it relates to their construction, communication and collaboration features, and, how to accurately assess digital evidence of competency. Future development of ePIE and its successors will be guided by ongoing research and evaluation with all key stakeholders. Meeting the challenges identified for implementation is possible with a commitment to collaboration and a desire to progress a true learning organisation and simultaneously reach the national and local policy targets.

Acknowledgements

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