Demonstrating professional teaching standards through ePortfolios

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In the current climate of assessment, accountability and accreditation teachers are increasingly required, from the early years of beginning teaching throughout their career, to document and thereby demonstrate professional competency. Supporting pre-service teachers in practising this process is a vital role teacher educators play to ensure their graduates are well prepared for the rigours of demonstrating teaching proficiency particularly in their beginning years of teaching. Against a backdrop where The Melbourne Declaration on Educational Goals for Young Australians (MCEETYA, 2008) is informing the construction of national teacher accreditation, it is made clear that there is a firm expectation that graduate teachers from Australian universities will be conversant in digital technologies. These beginning teachers are expected to use Information Communication Technologies (ICT) in the preparation of teaching lessons, as a pedagogical tool in the classroom, and as a means of extending their own ongoing professional knowledge and interaction.

Through inter-university collaboration and online learning communities, students in their final years of teacher education across three universities are currently involved in an 18 month ALTC project designed to assist students in developing ePortfolios which exemplify NSW Professional Teaching Standards achieved during professional experiences. The purpose of such a project is to enhance the skills and knowledge of pre-service teachers with regard to professional teaching standards through an ICT platform in a supported community. This paper will explain the rationale behind the selected processes and ICT tools and will demonstrate how they have been utilised to assist beginning teachers in meeting current professional demands. Observations, survey feedback and ePortfolio artefacts form the basis of data collected and will be shared in the presentation. Preliminary results drawn from the qualitatively analysed data suggest that the use of ePortfolios enhance critical ICT skills and pedagogical knowledge that beginning teachers need in order to demonstrate teacher competency.

Introduction – expectations of graduate teachers

Demonstrating competency through the meeting of professional standards has become a commonplace expectation in educational systems around the world (Day, 2004, 2007; National Commission on Teaching and America's Future, 1996). According to the newly established Australian Institute of Teaching and School Leadership (AITSL): "The National Professional Standards for Teachers are a public statement of what constitutes teacher quality. They define the work of teachers and make explicit the elements of high-quality, effective teaching in 21st century schools that will improve educational outcomes for students" (Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA), 2011:2). It is anticipated by these accreditation bodies that use of professional teaching standards will also enhance teacher professional development and raise the status of teaching. This view is supported by Danielson & McGreal (2000) (cited in Tang, Cheng & Mui So, 2006) when commenting on the role of professional standards state "a teacher evaluation system that provides maximum opportunities for teachers to play a more active role in self-directed enquiry is more likely to enhance professional learning" (p. 224).

However, for many pre-service and beginning teachers the articulation of their teaching practice and the justification of their decisions can be challenging particularly if there has been heavy reliance during practicums on seemingly intuitive decision-making and/or imitation of previous teacher models derived from current or past school experiences without adequate reflection.

Therefore, if teacher education programs are to adequately prepare pre-service teachers (PSTs) for the expected demands of their career they must assist them in developing skills of structured reflection facilitating a process of identifying and explaining competencies in teaching practice. Such self-reflection through the mapping of skills and knowledge is a critical aspect of developing proficiency in any profession. Schön (1987) in Bouriscot & Roberts (2006) notes "reflection-in-action is an essential aspect of educating professionals" (p. 79). Where pre-service or beginning teachers are older and may have had significant experience in another career, as a teacher's aide, or as a parent (such as many Indigenous PSTs who work as Aboriginal education workers in schools) knowledge and skills utilised for many years may be undervalued or left unidentified by the PSTs themselves. The result is that while these particular PSTs may demonstrate competency in their teaching, the skill to recognise it, name it, and/or provide documentation to show how it meets competencies, may not be in their 'scope' or well-practised.

In addition to skilling PSTs in reflection on teaching practice and identifying competencies, teacher education programs are required to strategically and systematically provide experiences and appropriate ICT tools for use in the teaching profession (focus areas 2.6 and 3.4, AITSL, 2011). Results from a study administered across 38 Australian universities indicate that there is considerable variation among undergraduate experiences of assessment and use of ICT within courses (Ingvarson & Hattie, 2008) suggesting that until recent times the utilisation of relevant ICTs is not consistently infused in higher education courses. Despite this it has been confirmed in another study of the same year (using the same universities and cohorts but with a research focus on the use of ePortfolios) that 84% of participants agreed or strongly agreed that using ePortfolio software assisted them in evaluating and reflecting on their learning journey (Hallam, Harper, McCowan, Hauville, McAllister and Creagh, 2008). This experience with ePortfolios is not unique to Australian higher education students. Students in the UK (Joyes, Gray & Hartnell-Young, 2010) and USA have reported similar findings (Bartlett, 2006; Peter, Chevrier, Leblanc, Fortin & Mallette, et al., 2006; Ring and Foti, 2006; cited in Hallam, et al, 2008).

Indigenous cohorts in pre-service teacher education

The absence of Indigenous teachers at all levels of education has been a significant factor in the alienation of Indigenous students from school and the under-representation of Indigenous students in higher education (Reid, Santoro, Crawford & Simpson, 2009). In 2009 "there were just 1565 Indigenous teachers in Australian schools" (Reid et al., 2009, p. 68) suggesting that the presence of Indigenous teachers is still not prominent. Some graduates from pre-service teacher education courses where study was facilitated through residential block mode report feeling that their pre-service education marks them as different from 'mainstream' teachers – even though the content of their degrees is identical. Compounding this, recent research into career pathways of Indigenous teachers has indicated that becoming a teacher remains fraught with difficulty for Indigenous people (Santoro & Reid, 2007). A project such as the one reported here is a resolute way forward in ensuring consistency across student groups and facilitating the building of necessary skills and knowledge that will be required for their careers.

A federally funded learning and teaching project 2011 – 2012 (administered by the Australian Learning & Teaching Council) has enabled a group of academics from three universities to consider these issues and potential tools available when devising ways of supporting and developing PSTs in skills of self-assessment, reflection, and articulation through ICT. As the project rationale states:

> *The purpose of using ePortfolio is to facilitate reflection, support inquiry into classroom success and failure, and influence self-improvement plans. The project's focus on using digital technologies in assessing professional teaching standards allows collaborative sharing and support that enables teachers to move beyond teaching environments that can often be isolating.* (Project rationale pp. 1 – 2)

Hence, the purpose of this ALTC study is to design, implement and evaluate a program for PSTs of both Indigenous and non-Indigenous backgrounds that aims to assist them to practise, reflect, identify, articulate, and share in an environment of support and guidance using appropriate software. The goal is to ensure that the graduates will have the requisite skills and knowledge needed for their professional development journey.

Implementation of the project and research methods

The participants in the project derive from three different university primary teacher education courses. Student groups comprised final year or penultimate year PSTs who therefore had some experience of teaching in a primary school context. Across the 18-month period, up to 55 undergraduates were involved in different aspects of the process and provided feedback: some for the whole 18 month period; others only for 12 months as they graduated at the end of 2011. The aim of the project is to facilitate a consistency between the programs delivered to both mainstream on-campus units for non-Indigenous PSTs and those that are offered in residential blocks by two of the universities for Indigenous PSTs who may live locally or in rural regions. A variety of tools were used in the implementation of the project. These varied from tutorial and lecture instruction and facilitation (face-to-face and video conferencing); software manuals written and provided to all PSTs; free provision of a software program (Weebly Pro) to be used for ePortfolio construction; phone and Skype for individual and group support; and opportunities to reflect and critically evaluate peers' work in progress as well as finished products. The finished product of the project is an ePortfolio that consists of a professional profile, a teaching philosophy, and seven web pages each of which detail a professional teaching standard, a focus area, and a descriptor with justification regarding the selection of included artefacts which are either embedded or hyperlinked. The artefacts are accompanied by annotations showing precisely what part of the artefact is relevant and what particular descriptor is demonstrated.

Three main ICT tools were selected for use in the project: a) video-conferencing; b) Weebly Pro; and c) Skype for when PSTs were not on university campus. Video-conferencing was a reliable tool when bringing together up to 20 PSTs plus academics (per conference) for discussion and instruction. Scanning whole groups, using PowerPoint, and focusing in on specific individuals were all easily achieved with videoconferencing tools. The decision to use Weebly Pro as the ePortfolio program was due to its ease of use and the way in which users can exercise significant flexibility without needing to know a great deal about creating websites. While Weebly Pro has associated costs, basic Weebly is 'open source' and is therefore available to PSTs post-graduation. Hyperlinked menus clearly displaying the contents of ePortfolios, easy uploading of documents, simple embedding of pdfs and photos, and opportunities to use slideshows, video footage, sound files, and other artefacts gave the PSTs many avenues for demonstrating competency. Skype for long distance individual and small group discussions was selected because this program was well known, free to download, and relatively easy to use. However, its weakness was its reliance on broadband connections that in rural and remote areas could be intermittent resulting in conversations reduced to 'audio only'. Phone conferencing was sometimes more efficient and less frustrating but reduced the non-verbal communication.

The method used to collect and analyse data is primarily qualitative using observations during tutorials and discussion; surveys after instructional sessions; and analysis and assessment of PSTs' work samples – the ePortfolios. An action research approach has been adopted which has enabled

the team to systematically and intentionally research their practice with the aim of improving practice for their cohorts (Lytle & Cochran-Smith, 1990; Oberg & McCutcheon, 1987). Each phase of the project was reflected upon and strategies modified for future use.

A brief summary of the processes used to teach and assist PSTs in developing ePortfolios that demonstrate professional teaching standards is given in Appendix 1 to facilitate a clearer understanding of how and when data was gathered. Briefly stated here PSTs were taught and supported using a combination of inter-university groups as well as small group or individual instruction. There are two cohorts of PSTs from one university thus enabling two dyads of student groupings to be formed, i.e., University A grouped with University C (group 1) and University B grouped with University C (group 2). University C PSTs are from a non-Indigenous background and lived in rural communities, Universities A and B PSTs are Indigenous and, throughout the year, may reside in rural or city areas. Aligning university study calendars as well as practicum and on-campus residentials is a challenge requiring some flexibility in delivery and approaches across the dyads.

Survey data (strategy #1) consisted of open-ended questions and Likert style statements that would assist in determining how well the PSTs were able to absorb and understand the professional standard information and the ways in which they could collect and use practicum artefacts and software tools to demonstrate teacher competency at a graduate level. Responses were tallied and open-ended answers were transcribed in full. The data from these surveys enabled the inter-university team to modify and confirm strategies used for duplication in 2012. Summarised notes from the Skype and phone conversations (strategy #2) were used to determine those areas where PSTs found it hard to make connections between what they were producing on practicum and how it could be used as evidence for particular standards. The actual ePortfolios were shared between participants and academic staff at video conferences involving the paired cohorts of student groups (strategy #3), comments from participants in these video-conferences were recorded and the final submission of ePorfolios via Weebly are evidence of how well the PSTs were able to demonstrate their competency in their most recent professional experience. EPortfolios were examined and assessed on the suitability of artefacts to support the selected standards; the clarity of explanations and justification of artefacts; the use of Microsoft Word tools to highlight, emphasise, and pinpoint the relevant part of the artefact; and the innovative and professional use of Weebly to showcase the professional skills and knowledge.

Findings and discussion

Three forms of data were gathered to determine how effectively the project has enhanced PSTs' use of ePortfolios to demonstrate professional teaching standards. These methods were a) survey data, b) observational data taken as notes during discussions and tutorials, and c) work samples of pre-service teacher ePortfolios.

Survey results

Thirty-four (*n*) PSTs participated across the two May videoconferences. Data was gathered through a post conference survey administered to the PSTs focusing on the impact of sessions on their familiarity with professional teaching standards, knowledge about types of artefacts that are possible in an ePortfolio, skills and knowledge in working with Weebly, Skype, and use of reviewing tools in Microsoft Word to annotate artefacts. Of the 34 responses the results are that:

- 31 PSTs believed that the information about professional teaching standards and the use of ICT (such as Weebly, annotation features in Microsoft Word, and Skype) was at the right level and amount
- 33 PSTs made positive responses about professional teaching standards and ICT materials provided.

The following Likert style statements (Table 1) required PSTs to rate their understanding concerning differing aspects of content and skills presented in the conference.

Table 1: *Rating results of PSTs survey regarding the videoconferences*

As a result of today's conference my:	Did not increase	Increased by a small extent	Increased by some extent	Increased by a large extent	Nil response	Total number of responses (*n)*
understanding about professional teaching standards	0	6	15	13	0	34
knowledge of how to provide evidence of my competency	0	2	17	15	0	34
skills and knowledge in using Weebly and Skype	0	10	17	6	1	33
skills in using Microsoft Word to annotate, hyperlink and embed artefacts	0	8	20	5	1	33

The responses from students suggested that a little more time would have been helpful in exploring the capabilities of Weebly and Skype and practising the use of Microsoft Word tools to enhance clarity in annotating and presenting artefacts. However, the videoconference which utilised combined knowledge and skills from all three university lecturers had overall been successful in familiarising PSTs with both the standards and the use of ICT tools.

Observational data

Strategy number two involved academics from all three universities working with individuals or small groups of PSTs via Skype or phone during or directly after professional experiences. Observational notes were made by the academics as to the nature of questions, difficulties and success experiences by PSTs in collecting artefacts, using artefacts in a way that would evidence standards, and technical skills in mounting artefacts on Weebly sites. A summary of the most commonly discussed areas, the nature of the discussions and the main points of each are given in Table 2.

Table 2: *Summary of areas of discussion during individual and small group support sessions*

Area of discussion	**Examples of main questions underpinning discussion**
Knowing what artefacts to collect	• What standards are exemplified in my lesson planning? • What can I use as evidence for classroom management skills? • What about element 7 (collaborating as a professional) – what can I use to show that I have done that? • How can I show that I have communicated clearly to my students?
Privacy and confidentiality	• If I want to photograph a display of students' work how can I protect their privacy?

Area of discussion	Examples of main questions underpinning discussion
	• Can I use photos of my students in role-plays as an example of a different type of assessment strategy?
How to make links between artefacts and standards e.g. explanations and annotations	• I have written lesson plans and units of work but how can I show that I used outcomes to plan my lesson or that a particular assessment strategy meets the lesson outcomes?
Using one artefact as evidence for several standards	• If I want my unit of work to show quite a few different standards how can I make that clear? • Can I use different colours or fonts or coding to show how one artefact can be used for evidence for several standards?
Technical aspects in Microsoft Word e.g. reviewing tools or text boxes to highlight specific parts of artefact	• Why do I need to annotate if my Weebly page has a clear explanation of the artefacts? • How do I annotate a photo? a PowerPoint? or a scanned work sample?
Technical aspects of Weebly e.g. uploading documents and photos, changing fonts, styles, etc.	• When I upload documents it appears on the screen as an icon but when I close my Weebly and re-open it, the icon has disappeared. Why? • How do I change the font style and size?
Additional inclusions to ePortfolio content	• If I wanted to include my teaching philosophy and a unit of work I designed for a university assessment could I include that in my Weebly too? • What about referencing – where should that go?

This strategy appeared to assist PSTs in recognising and articulating what they do in the preparation and implementation of lessons as a clear demonstration of teacher competency in addition to assisting them to identify how their practice met the standards. The conversations featured a strong focus on pedagogy and what constitutes sound evidence of learning. Frequently, responses such as "Do you mean that just showing how I have used an oral presentation, a worksheet, PowerPoint slides and draft writing in my unit of work would be enough to demonstrate that I am using a range of assessment strategies?" or "I don't think I have done anything that demonstrates using student assessment for forward planning". Yet, when these types of statements and teaching practice were discussed the PSTs were able to see that quite often preparation and teaching when focused on the best possible student learning, actually provided clear evidence of professional knowledge informing professional practice.

A good portion of the questions and discussions focused on technical and practical elements of mounting an ePortfolio. Some of the questions could be answered immediately but others required the project team to 'play' with Weebly themselves or ask for ICT advice to try to work out solutions. As can be seen in the next section, the ePortfolios submitted demonstrates that much of the technical issues were resolved so that the content of the ePortfolios could be successfully, and often creatively, displayed.

Work samples – the ePortfolios

A videoconference between pre-service teacher dyads later in 2011 enabled a sharing of submitted ePortfolios and a discussion of what had been learnt throughout the process. The 21 submitted ePortfolios demonstrated the following attributes:

1. All ePortfolios were clearly designed consisting of structured web pages

2. Explanations of artefacts were generally coherent and linked well to standards
3. Annotations were provided in the hyperlinked or embedded artefacts using Microsoft Word reviewing tools (see Figure 1)

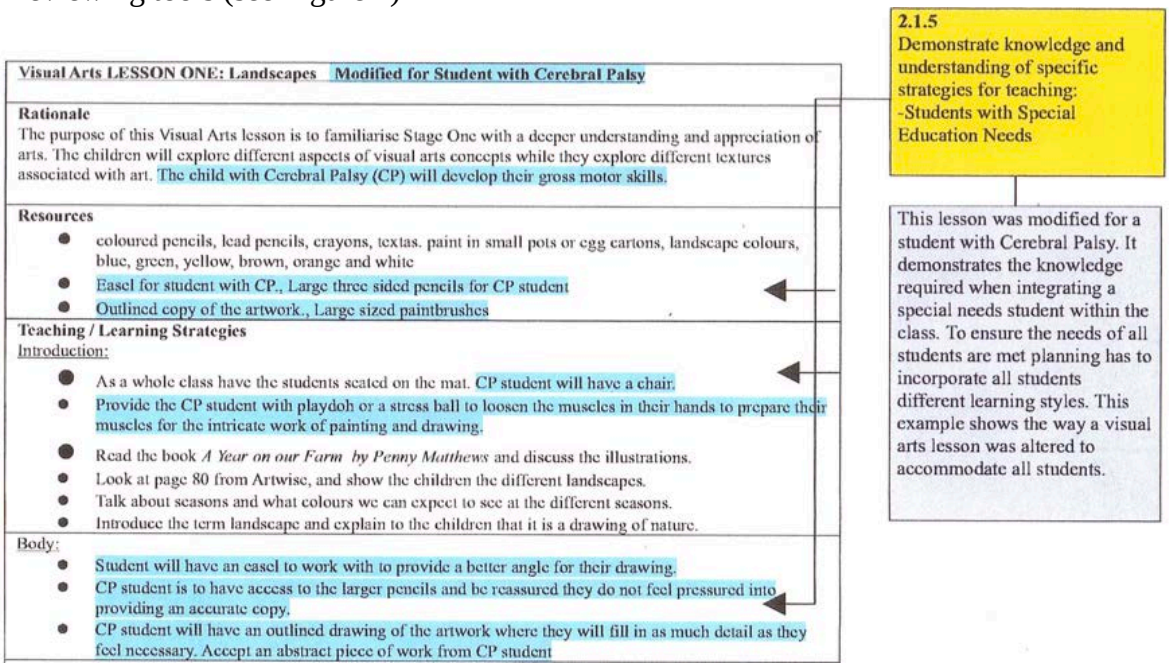


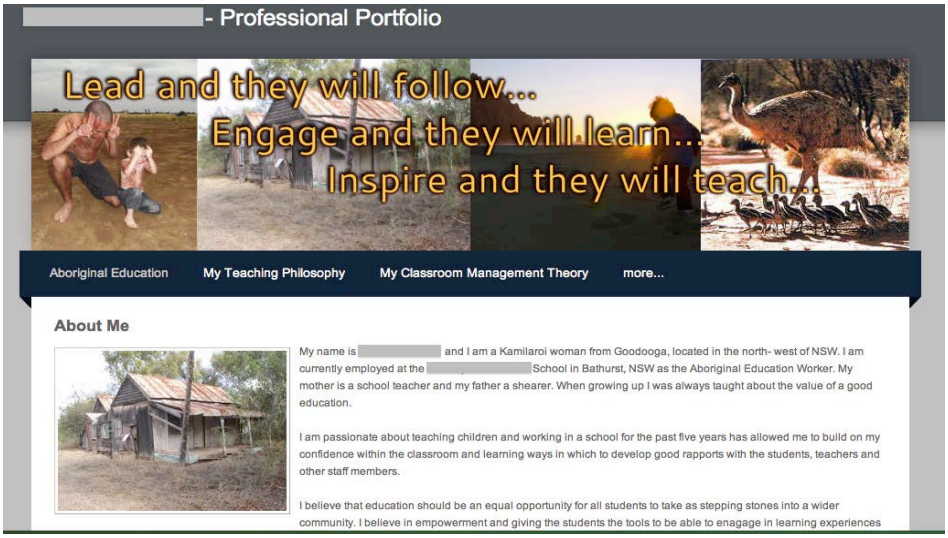
Figure 1: *Annotations on a lesson plan artefact demonstrating the catering of special educational needs*

4. The annotations on the artefacts and the justification of selection of artefacts used the meta-language of the teaching standards (see Figure 1)
5. The design and style of the ePortfolios ranged from simple and quite pleasing to sophisticated and highly personalised (see Figure 2)
6. Resourceful and innovative ICT skills were utilised to demonstrate breadth of standard evidence (e.g. a slide show of resources used in a unit of work)
7. Some students explored beyond what was required and saw potential for Weebly sites beyond their course as a complete professional profile

Figure 2: *A personal yet professional home page*.

A sample of comments made by PSTs during the videoconferences are also provided to demonstrate their response to the task:

- "[I found the ePortfolio to be] *a good way to share my career progress information*".
- *"I shall continue my Weebly for my accreditation process. I will be linking this in my letter to future Principals".*



- *"The ePortfolio can be used for much more than displaying my teaching philosophy and evidence for professional teaching standards. It can be used for interviews, transcripts and career progress".*

The level of excitement and some nervousness as pre-service took turns in presenting their work was palpable. Discreet pleasure was experienced by the participants when other PSTs and lecturers commended their ePortfolios and made comments such as "*How did you do that? That's amazing!"* [referring to the resource slide show mentioned above]. In the time since these PSTs have graduated, a few have taken the time to email lecturers and explain how they have since used their ePortfolios. Here is one such comment:

> *I took my laptop to my interview with a principal and showed him how my work is evidence of the standards and he was really impressed. I think he was particularly impressed that I could create a site like that too.*

Conclusion

Difficulties with aligning university calendars and the [un]reliability of broadband connections at times made this project a challenge. However, preliminary findings suggest that using an ePortfolio (i.e. Weebly and Microsoft Word reviewing tools) and communication software tools (i.e. Skype and video conferencing) has enabled PSTs to develop technical skills, and a sense of confidence and achievement, at the start of their teaching career. Furthermore, the strategies utilised in the project have been very successful in enabling PSTs (whether from an Indigenous or a non-Indigenous background) to capably identify and demonstrate what they know and can do professionals.

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Appendix 1: *Summary of the strategies used in implementation of the project*

Strategy	When	Who was involved	What was covered	Why this strategy	Data gathered for evaluation
1. Video-conferenced instruction	May 2011	University A + C (group 1) University B + C (group 2)	What are professional teaching standards (PTSs)? How are PTSs used to demonstrate competency? Introduction to Skype and Weebly	Across campus instruction via video conferencing facilitated clear audio-visual discussion, questions and lecturer input. Questions raised by both groups enabled breadth of understanding and ideas.	Surveys were distributed to PSTs asking them to comment on how well they understood the standards, how well they understood how to use artefacts to support competency in the standards, and how confident they were in using Skype and Weebly as software tools.
2. Skype and, where needed, phone conferencing	June/July 2011	Individual PSTs during and post-professional experiences with individual staff	Discussion about professional experience, the artefacts they were gathering and what could be used to demonstrate their professional achievements	Skype is a freely downloadable program that enabled face-to-face communication. Giving PSTs an opportunity to discuss with lecturers their practicum experiences during or directly after practicum relating it to standards facilitated clear linkages to competency.	Academics recorded discussion points and noted areas that were causing confusion or needed clarification. Emails between academics regarding difficulties of making contact (due to busyness of PSTs as well as technology drop-outs in lines)
3. Video-conferenced evaluations and critique	Sept/Oct 2011	University A + C (group 1) University B + C (group 2)	Sharing of ePortfolios so far (ePortfolios were submitted shortly afterwards for Universities A & B). Discussion and critique of ways in which PSTs used ePortfolios.	Video-conferencing tools enabled PSTs to readily share their work, discussing technical and academic aspects – the challenges and the successes.	Actual ePortfolios were submitted and reviewed by all PSTs groups. Observational notes and direct quotes were collected.