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Purpose-built, Web-based Professional Portfolios: Reflective, Developmental and Showcase

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Abstract: This pilot study examined student engagement with a web-based digital professional portfolio through the 3C process of collect-critique-curate. To overcome common problems associated with electronic portfolios, including cost; specificity; lifelong access; and ease of use, the study used Weebly as its portfolio platform. The creation and use of the portfolio was embedded into the first professional studies unit in the second year of an undergraduate initial teacher education degree, and technical seminars ensured that the base portfolio was created. As students reflected on possible sources of evidence to demonstrate achievement of the Australian Professional Standards for Teachers (AITSL, 2011) and crafted their capacity statements to preface their CVs, they began to clarify their present selves and to envisage their possible future selves as graduate teachers. The study tested strategies, based on the notion of self-authorship that assisted the students' transition from aligning with a personal student identity to demonstrating a burgeoning professional teacher identity.

Introduction

There exists a large and continually expanding body of research into the affordances of electronic portfolios. This research acknowledges that electronic portfolios can be a convincing and authentic means of assisting pre-service teachers to become reflective whilst increasing their ICT capabilities (see Janosik, & Frank, 2013; Jones, Gray, & Hartnell-Young, 2010; Oakley, Pegrum, & Johnston, 2014). Aguiar, Chawla, Brockman, Ambrose and Goodrich (2014) contend that rethinking and reshaping the concept of the portfolio will also help educators increase student retention and enhance student career progression through the development of salient identity and an enhanced learning experience. The study presented in this paper sought to support this development through an enhanced learning experience using web-based Digital Professional Portfolios (DPPs), which are customisable, personalisable, and discipline-specific with career portability.

The DPP took advantage of the Web 2.0 environment, which allows for far more flexibility and accessibility than traditional electronic portfolios (ePortfolios) that are commonly embedded in institution's learning management systems. Within this environment, the DPP was custom-designed to overcome the four most problematic aspects of current ePortfolio platforms: cost; specificity; lifelong access; and ease of use for new adopters. An important and challenging influence upon initial and enduring transition into the profession is the development of a new identity as a "teacher" (Helms-Lorenz, Slof, Vermue, & Canrinus, 2012). This pilot study aimed to employ the creation and use of a DPP to carry students over

the “threshold” that separates their personal student identity from their professional, teacher identity. In so doing, this DPP scaffolded students to undergo a cyclical process that was aimed at developing their professional identity that has become recognised as a predictor or retention in the profession (Mansfield, Beltman, & Price, 2014).

The need for this study stems from international concern about the attrition rates of early career teachers, which are reported in the United States, where such data is rigorously collected, as being 40-50% in the first five years of service (Kolbe, 2014). These rates are derived from the *US Schools and Staffing Survey* and its supplement, the *Teacher Follow Up Survey*, and attrition is calculated as cumulative proportional loss for each year of experience (AITSL, 2016; National Centre for Education Statistics, 2011). In Australia, it is difficult to collect the same kind of data (Buchanan, Prescott, Schuck, Aubusson, Burke, & Louviere, 2013); however Ewing and Manuel (2005) claimed that in Australia, as with other Western countries, one-third of early careers teachers have either resigned or have “burned out” in the first three to five years. A 2007 Commonwealth Parliamentary Committee inquiry into teacher education suggested that up to 25% of graduate teachers leave the profession within the first five years. This figure was drawn from a submission to that inquiry (House of Representatives Standing Committee on Education and Vocational Training, 2007).

In Australia, the Initial Teacher Education (ITE) Reform (AITSL, 2016) has resulted in the missive that all ITE programs must produce graduate teachers that are “classroom ready” so that they will have maximum impact on student learning. To this end, graduate teachers need to provide evidence of affective practice against the AITSL Professional Standards for Teachers (AITSL, 2011). As initial employment and career progression in education systems are determined by evidence of demonstration of these professional standards, it is crucial that pre-service teacher education programs spotlight a suitable *tool* (web-based digital portfolio) and a rigorous *process* (scaffolding of capture-critique-curate) to better prepare graduates for future employment and for reflecting on the nexus between theory and practice (Bennett, Rowley, Dunbar-Hall, Hitchcock, & Blom, 2014).

EPortfolios have enabled the transformation of traditional analogue collection and storage of certification and experience within paper-based portfolios to a digital medium, which in turn facilitates the “process of collecting, reflecting on, sharing, and presenting learning outcomes and other professional accomplishments” (Fitch, Peet, Glover Reed, & Tolman, 2008, p. 38). EPortfolios serve as repositories for digital artefacts (images, audio, video, and animations) and have functionality that allows for ease of organisation, restructuring, and cross-referencing (Oakley, Pegrum, & Johnston, 2014). Traditionally, these online spaces have been examined through “scientific paradigms where they are often viewed as a tool to measure outcomes or student progress” (Nguyen, 2013, p. 135). The different approach taken in this study aligns with *self-authorship theory* (Baxter Magolda, 2014; Boes, Baxter Magolda, & Buckley, 2010) and the theoretical framework of *possible selves* (Markus & Nurius, 1986). Thus, whilst the use of a web-based platform to create and house a Digital Professional Portfolio was in itself innovative, the study employed the associated process of *collect, critique and curate* – the 3Cs process (Sheffield, Blackley, & Bennett, 2016) to support students in the development of self-authorship. This entailed guided reflection on current and past selves, possible future selves, and both personal and employment-related employability traits.

Theoretical Framework and Research Approach

The pilot study reported here sought to answer the following questions:

1. In what ways might a Digital Professional Portfolio enable reflective thinking associated with self-authorship and identity formation?
2. How useful is the Cyclical Model of Self-Authorship supported by the use of Digital Professional Portfolios in scaffolding students to develop their professional identity?

Following Piaget (1950), self-authorship theory is grounded in a constructive-developmental perspective. Its adoption in higher education stems from multiple studies that have shown that students enter higher education with “perspectives they have uncritically accepted from others” and to go through their higher education studies without being “sufficiently challenged and supported to transition to internal authority” (Hodge, Baxter Magolda, & Haynes, 2009, p. 4; for studies, see Kegan, 1994; King & Kitchener, 1994). Scholars have observed that the development of self-authorship requires a curriculum through which students have opportunities to question their epistemological, intrapersonal, and interpersonal assumption: “to negotiate and act on our own purposes, values, feelings, and meanings rather than those we have uncritically assimilated from others” (Mezirow, 2000, p. 8).

In this study, the curriculum was the content of the Professional Studies unit in conjunction with the extra-curricular feature of the scaffolded DPP tool and process. The possible selves framework underpins the *tool* (a web-based digital professional portfolio) and the *process* (the 3Cs of collect-critique-curate) used to motivate students to reflect on their present selves and their possible future selves, and thus serves first “as incentives for future behaviour (i.e., they are selves to be approached or avoided) and second, an evaluative and interpretive context for the current view of self” (Markus & Nurius, 1986, p. 954).

The study was conceptualised as a model that connects the 3Cs process with emerging professional identity and self-authorship (Figure 1). In line with the constructive-developmental perspective (Vygotsky, 1978), the pilot study adopted an interpretive case study approach. The 3C process was constructivist in that students were actively involved in creating and populating their portfolios (self-authorship) and were required to reflect upon themselves by examining their philosophy of teaching, their potential contributions as teachers, and how they might enhance their employability.

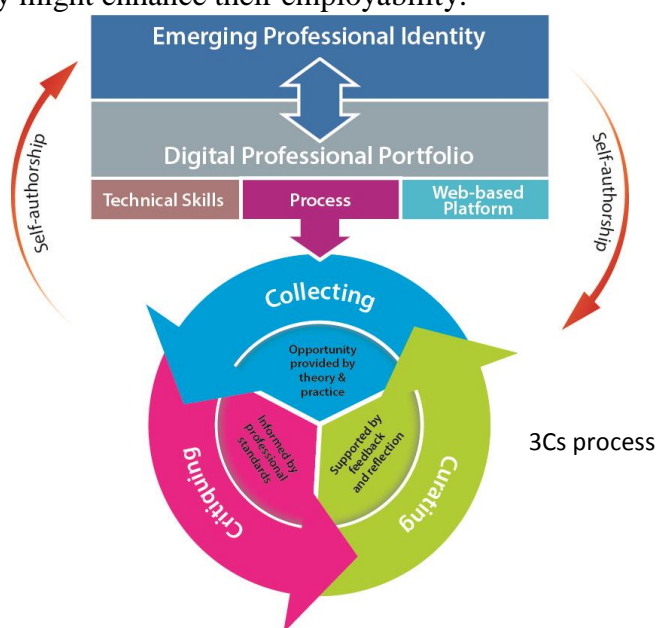


Figure 1: Cyclical model of self-authorship supported by digital professional portfolios.

The pilot study was undertaken in semester 2, 2015 and involved three classes of second year pre-service teachers (n = 88) in the creation and development of Digital Professional Portfolios (DPPs) as part of their professional studies unit. Students received support through two Technical Seminars in which they created their website, engaged in identity-related activities and reflections, and began the 3Cs process to house evidence of the AITSL Professional Standards for Teachers (AITSL, 2011). Through the process of building and populating their DPP, students were prompted to begin constructing their professional identity and to share their work with peers, with a view to continued curation over the remaining two years of their degree and thereafter as they graduated and continued their growth as educators.

As shown, the model is organic in nature: as students populate their DPP, the actions of collecting-critiquing-curating impact the development of their professional selves and, as they grow into their teacher identity, students refine their critique of evidence and artefacts. The process is both generative and transformative, and thus reflects a powerful transition that may not otherwise occur.

Technical Specifications

Web-site builder *Weebly*® was selected to host the students' DPPs as it met a number of crucial criteria and aligned with the developmental process of self-authorship: it was

- free/open access and not attached to the University's Learning Management System (LMS), which ensured that pre-service teachers could use their sites after graduation;
- intuitive, with a drag-and-drop functionality that was easy to use and with plenty of scope for personalisation and creativity (see Figure 2);
- viable in both Microsoft and Apple environments; and
- fluid, enabling pre-service teachers to choose when to publish their sites, when to provide access making their url available, and when to hide pages under construction or not directly related to a specific purpose.

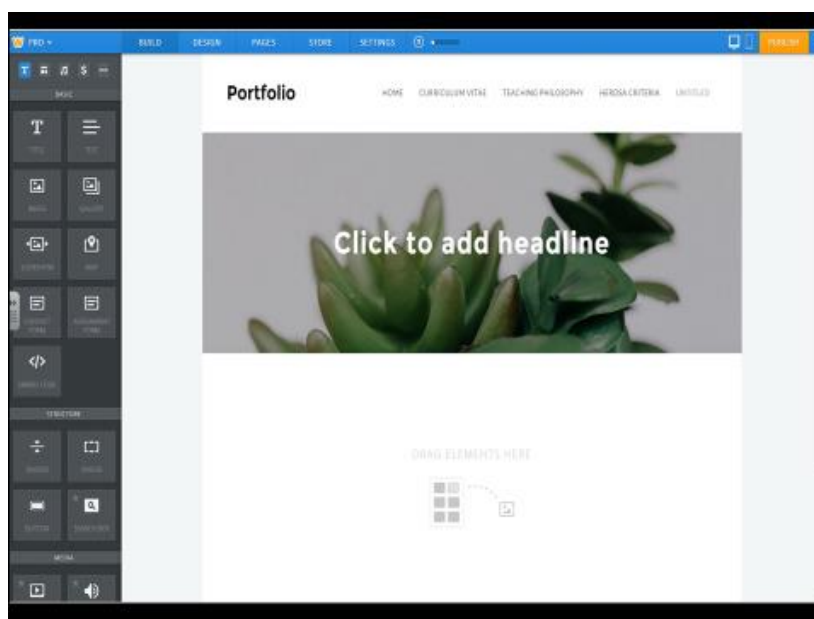


Figure 2: Weebly landing page showing drag-and-drop tabs at left

Procedure

Once ethical approvals were in place, students in a second year unit *Professional Studies and Managing Learning Environments* were invited to participate in the research component of the Digital Professional Portfolio development imbedded into the unit. Eighty-three of the 88 students consented; these students were assured of their anonymity and were made aware that they could leave the study at any time. Students had undertaken their first professional placement in semester 1, 2015 and their second placement was scheduled at the end of semester 2, in which semester the pilot project was conducted. In this respect, they came to the study with 18 months of theoretical learning and ten days of professional placement in a school.

Whilst the *Cyclical model of self-authorship* framed this pilot study, the focus was on the efficacy of the 3C process. There was an assumption that the students would have some fluency with using online platforms. However, their ability to create a professional website was not taken for granted - hence the provision of two Technical Seminars. The 3Cs process was scaffolded with two Technical Seminars conducted by the tutor in weeks six and 12 of the 12-week unit, thereby allowing time for students to build their portfolio sites and populate their pages. In-between the Technical Seminars, students engaged in follow-up sessions during their timetabled workshops and accessed individual assistance from their tutor and peers as required. In line with self-authorship theory, the seminars were crafted to maximise positive dispositions towards reflection and development. This was achieved by aligning every engagement with students' learning, teacher development and future work; thereby transitioning the students from thinking of themselves as "teaching students" to imaging their future self as a "student teacher" and then to a "graduate teacher".

The first Technical Seminar began by asking students to conduct an Internet search with themselves as the subject ("Google themselves"), and to share the results of their search with peers. The students were then supported to create both a landing page (home page) and pages for their Curriculum Vitae (CV) and Personal Philosophy of Teaching. The PowerPoint slide used for this task is shown at Figure 3.

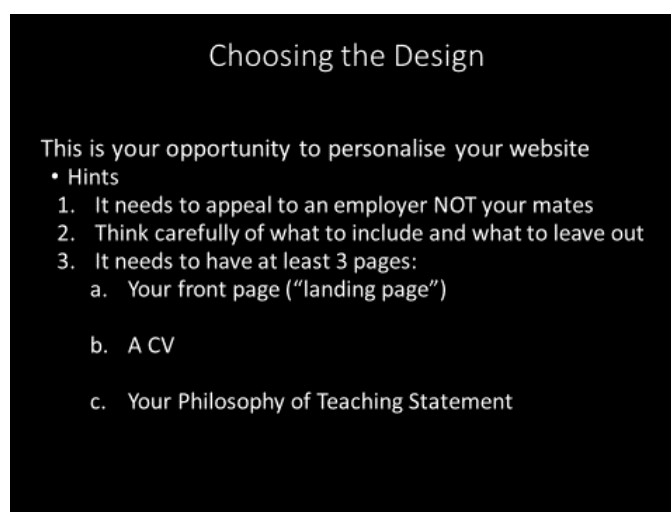


Figure 3: Technical Seminar 1 – PowerPoint slide introducing the web-site design

These pages were chosen to ease students into the website functionality and to encourage them to think of themselves as *teachers* rather than *students*. Participants had already prepared a Personal Philosophy of Teaching in the semester 1 companion unit, and an assumption was made that most, if not all, students would have a CV or resume at their

disposal. Those students who had a CV were invited to update and upload this document into their DPP, and those who did not have one were supported to draft a version to upload. In this respect, the two pages were easily populated so that students would feel a sense of accomplishment. At this stage, content added by students was not assessed or critiqued; rather, it constituted a placeholder created by the *collection* of evidence.

Six weeks later, the second Technical Seminar focussed on the components of a CV and the AITSL Professional Standards for Teachers (AITSL, 2011). To encourage students to think creatively about their CV and how they might “stand out” (i.e. be more employable) as graduates at a time when there is an over-supply of teachers (Weldon, 2015), they were stepped through the process of creating an *elevator pitch*: a brief, persuasive speech used to spark interest in an organisation, a project, an idea, a product, or oneself. Students constructed a written version of approximately 75 words, and delivered it to their peers in self-selected groups, so that feedback or comments could be received. This initial elevator pitch was later crafted into a *capacity statement* to be placed in their DPP as a preface to their CV. Most students already had some form of CV – from previous job applications and/or as a product of their secondary schooling. In essence the *collect* step was not onerous; however they were then asked to *critique* their CVs against the criteria explained during the seminar.

Initially the DPPs were used as repositories for components of the portfolios that the students had previously developed – typically as saved Word documents. Most students, for example, already had some form of CV from previous job applications and/or as a product of their secondary schooling. In essence, the *collect* step was for most students not onerous. This essentially translated to the *collect* stage of the 3Cs process, and those students who did not have previous versions of the components, such as CVs, were scaffolded to create these. Having students with previous CVs evaluate them against the criteria of an effective CV presented in the tutorial, and making necessary amendments before *curating* their CV in their DPP enabled the *critique* stage. After the second Technical Seminar, students were given time and support in the tutorials to collect, critique and curate evidence from their first professional placement against the AITSL Professional Standards for Teachers (AITSL, 2011) these were then uploaded into their DPPs.

Data Collection and Analysis

Data sourcing entailed the collection of student artefacts in the form of pages from their DPPs, two items pertaining to the pilot contained within an online survey at an end of semester, written researcher (the unit tutor) field notes comprising annotations of in-class discussion and personal reflections. The two statements in the online survey were:

- (1) The creation of the digital portfolio has prompted me to think of myself as an early career teacher, and
- (2) The consideration of content to put into my digital portfolio has helped me to reflect on my past achievements as well as my future goals.

Students responded to these statements using a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Analysis involved a comparison of the percentage of participants who indicated in the affirmative (i.e. strongly agree and agree) against those in the negative (i.e. strongly disagree and disagree) as well as those who indicated a neutral position. The pages of the DPPs were broadly categorised as: minimum requirements evident (i.e. the creation of the individual pages with little or no population); basic requirements evident (i.e. pages populated with CV, including capacity statement, and some evidence uploaded against the AITSL Professional Standards for Teachers (AITSL, 2011)); or above basic requirements evident (i.e. attention has been paid to DPP stylistics, additional, relevant pages created,

significant uploading of evidence against the AITSL Professional Standards for Teachers (AITSL, 2011), and incorporation of images, sound bites, or video). The tutor's notes were examined by the research team, were coded and themes identified.

The presentation of the findings begins with each of the Technical Seminars and then turning to the survey responses and some of the student artefacts. Identifiable objects such as photographs are used with students' permission.

Findings

Tutor's Notes: Technical Seminar 1

Personal

At the outset of the first Technical Seminar on campus, students were asked to "Google" themselves; this activity of searching for themselves on the Internet was a crucial first step in their thinking about *digital presence* and the distinction between their personal and professional persona. Students found that Google had harvested their pre-existing digital presences from LinkedIn, Facebook, and Twitter, which came as a surprise to some students. Some students were also alarmed that the accompanying photos were not of themselves, but of others who had the same name. As intended, the search results sparked a conversation about what would be appropriate, that is, "professional" to share with a potential employer. This was a useful segue to the selection of the stylistics of their DPP website. They had to consider design components: for example, how to give the landing page the *wow factor* without being frivolous or unprofessional.

Skills

Whilst the students typically exhibited fluency with digital technologies in class, such as using smart phones (or other mobile devices) to text message, post on Facebook, and source information (Googling), less than one-third of the participants were confident in creating an open-source website, despite having completed a first year technology unit in which they were exposed to a variety of platforms. Whilst *Weebly* has an intuitive and a user-friendly click-drag-drop functionality, many students struggled to create their DPP site within the allocated time. Some reasons for this included: connectivity issues, device issues (particularly when using smart phones), and/or an inability to complete each step in a timely manner resulting in lagging behind and increasing frustration.

Image

An in-class conversation was generated about the inclusion or otherwise of a photograph on the landing page; and if one were to be uploaded, whether it would need to be different to their Facebook image. In their previous Professional Studies unit, students had submitted a "Ready for prac" photo as one of their weekly tasks (see Figure 4 for a selection). Most students used the same photo for their DPP landing page, whilst others used their mobile phones to capture an image during class or used photos from their Facebook pages.



Figure 4: “Ready for prac” photos – professional and functional

Tutor’s Notes: Technical Seminar 2 *Personal*

During the second Technical Seminar, students engaged with the more challenging task of developing an *elevator pitch* that was memorable, interesting, and no longer than 30 seconds. Students were provided with the following example that the tutor read out loud to them:

I have a passion for STEM education and have completed three STEM electives and participated in a school-based research project. I tutor primary school students in mathematics and am a member of the Western Australian Association of Mathematics teachers.

The text was then displayed to them using a PowerPoint slide, and the pros and cons of the pitch were discussed in small groups and then with each whole class. Students were able to identify some distinguishing features of this pitch, including: the use of an emotive word (“passion”), evidence of interest beyond the standard course work, extra-curricular work in an educative field, and evidence of an emerging professional identity (i.e. membership of a professional association). Students were given ten minutes in class to draft their draft elevator pitch, after which time they were invited to share it with several peers by reading it out loud. Of particular note was the difficulty many students had in identifying what could, at this stage in their degree, make them stand out to a school principal. Several students bemoaned the fact that they had no special passion or experience related to teaching, to which the tutor responded that they had two more years to gain that experience. Students in need of help were assisted to rephrase their text in a way that might capture a focus that would make them more employable. For example, rather than a vague statement such as “I enjoy music” this could be re-phrased as “I am passionate about music and have run programs at my local school to mediate student behaviour by playing Mozart as background music in the classroom”.

Skills

The elevator pitch was later crafted into a *Capacity Statement* (Figure 5) to be positioned in the DPP as the preface to the students’ CV. This entailed changing the initial text from 1st person to 3rd person and then extending the statement to note other strengths, experiences and interests related to teaching. At this stage, students began the process of *critiquing* their evidence by auditing their placeholder CVs against the components shown in Figure 6. Students raised a number of questions, summarised below, and it was noted that these questions were consistent across the three classes.

1. Students asked what “personal details” are appropriate for a CV, and how much should be disclosed. For example, should a CV include marital status and age? This

- appeared to be of particular concern as their DPP was hosted on an open-access website.
2. “Key skills and competencies”, whilst focussed initially on those directly related to teaching, were for some students distilled from seemingly unrelated contexts such as experience as a checkout operator. It often took some prompting to make these links.
 3. There was also discussion about the pros and cons of including referee details as opposed to uploading a written reference, and *who* to target as a referee – currency over acclamation.

Capacity Statement

■■■ is a pre-service teacher who is passionate about science, technology, engineering, Arts and mathematics (STEAM) education. After five months of dedicated volunteering at Perth's iconic Scitech promoting science, technology, engineering and mathematics (STEM) to early childhood, primary school, secondary school and adult visitors, she started working as a paid employee. During her employment at Scitech she assumed many different roles as science communicator, front of house admissions, ticket collector, birthday party entertainer, school programs guide, special events staff and bookings administrator.

After ■■■ was hired at Scitech, she continued her passion to promote STEM/STEAM by volunteering for the Science Teachers Association of Western Australia (STAWA) of which she had been a member since May 2015. She also volunteered her time as the student coordinator and Facebook administrator of Curtin University's School of Education MIS Makerspace initiative, which promotes participation in STEM to women and girls. For all her efforts and dedication, she was nominated for the 2015 Pearson Student of the Year Awards.

Figure 5: Sample Capacity Statement

Components of your CV

- ▶ Personal details - limited
- ▶ **Capacity statement** – skills and areas of expertise
- ▶ Work experience:
 - ▶ Where, role/job title, timeframe, duties (dot points – avoid jargon)
- ▶ Key skills and competencies
- ▶ Academic qualifications
- ▶ Referees/ references.

Figure 6: PowerPoint slide used in Technical Seminar 2 to audit students' CVs

The final stage of seminar two was to create pages for AITSL Professional Standards for Teachers (AITSL, 2011) numbers 1 to 4. For this task, students needed to gather (*collect*) evidence from their first year of studies and other experience, reflect on what might constitute useful evidence against the standards (*critique*), and decide how and where it might be presented (*curate*). In-class time was not provided for the 3C process at this stage, so students were left to manage this by themselves, albeit with the advice from the tutor that they all at least had their first professional placement report and had lesson plans and other documents collected from their placement that would be appropriate to upload. Challenged to be more

independent, many students were seen to provide and benefit from informal peer mentorship resulting in one of two outcomes: either they had a wealth of evidence and had some difficulty determining what would be best to curate, or they decided that at this point, they had nothing of value to curate and would need to address this apparent deficit.

Survey responses

Student responses to the end of semester online survey revealed that 63% of students *strongly agreed* or *agreed* with statement 1 (The creation of the digital portfolio has prompted me to think of myself as an early career teacher.), and 57% with statement 2 (The consideration of content to put into my digital portfolio has helped me to reflect on my past achievements as well as my future goals.). Of interest is that approximately one-quarter of the respondents chose a neutral stance for each statement.

Artefacts: DPP pages

Whilst not all participating students submitted their *Weebly* url so that the tutor could view their DPP, a number of students who did so had developed their DPP beyond what was required within the scope of the two Technical Seminars. The series of images shown at Figures 7a, b, c and d have been captured from the DPP site of one such student, who drew upon evidence and artefacts from volunteer teaching, tutoring, mentoring, childcare, and coaching. Of note was that images in these DPPs had been *captioned* by the students to provide a context and rationale for inclusion. Overwhelmingly, students such as the one featured below were motivated to continue their DPP development for two reasons: firstly, they understood the potential for the DPP to become a valuable professional tool; and secondly, they had accrued evidence that could be critiqued and curated for inclusion in the portfolio.

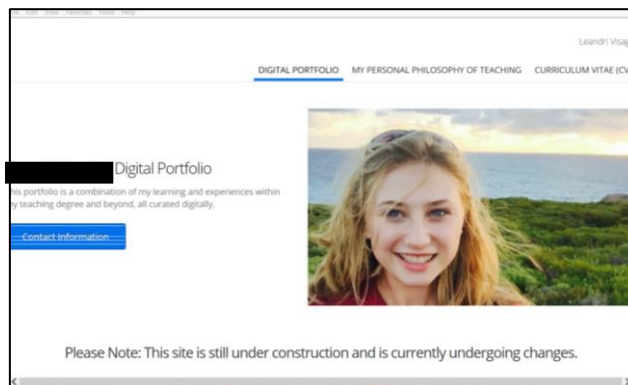


Figure 7a: Landing page

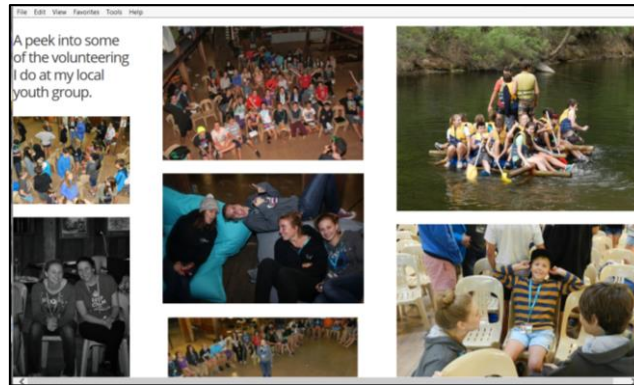


Figure 7b: Evidence of volunteer work presented as a photo story

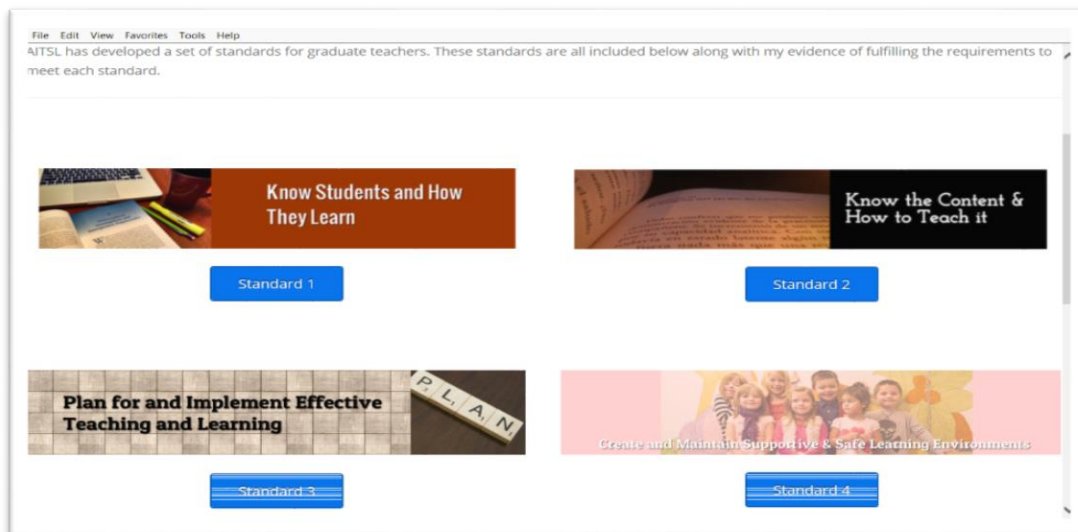


Figure 7c: A webpage from which users can navigate to pages for each standard



Figure 7d: Curation of evidence against one of the standards – with caption

Discussion

In combination, the DPP tool and the 3C process challenged students' epistemological understanding of themselves, and the interpersonal and intrapersonal reflections needed to make decisions about layout, content, detail, and relevance contributed to the transition from personal student identity to professional teacher identity. Although this was a pilot study, the use of the open-access web platform (*Weebly*) eliminated three of the four challenges associated with digital portfolio use: cost, specificity, and ease of use for new adopters. The version of *Weebly* presented to the students (<http://name.weebly.com>) did not incur any cost, and provided more than adequate functionality in the form of hyperlinks, ability to upload photos, navigation buttons, url links, and hiding pages under construction. Personalisation was managed by the users; in this case, how and what evidence was uploaded to the pages for each of the AITSL Professional Standards for Teachers (AITSL, 2011), the layout and design of the landing page, and the CV page. All students were quickly able to use the click-and-drag menu to create their pages, and drop-down menus allowed for intuitive creation and styling of pages and sections. The only challenge that remains in doubt is life-long access – clearly the lifespan of *Weebly* as a website development tool is not known – however, users have the capacity to download and transfer their DPP pages as necessary. As *Weebly* sits outside of the institution's LMS and website, students will be able to use and further develop their DPP beyond their degree and into the profession. In this respect, the DPPs and the 3C process resulted in the creation of a reflective, developmental *and* showcase portfolio. Whilst the reflective nature of the DPP and 3C process is clear both in the model (Figure 1) and in how students engaged over the semester, the developmental aspect was also of value. In essence the DPP became a teaching tool that enabled the tutor to explicitly link student learning with their professional futures.

The *Cyclical Model of Self-authorship supported by Digital Professional Portfolios* emphasises that the *collection* of potential evidence and artefacts occurs within both the university context and the school placement – thus valuing *both* aspects of pre-service teacher education. The *critique* of collected evidence and artefacts was undertaken using the professional standards; however, for this to be successful, students needed to understand (rather than to know) the meaning of each professional standard and sub-standard – the interpretation of each standard needed to be supported by a more knowledgeable other (Vygotsky, 1978), which in this case was the tutor. The third stage of the 3C process, *curating*, provided further opportunity for reflection on the evidence collected and critiqued by students as well as reflection on the feedback received from the tutor. The DPP itself became the medium for self-authorship (in fact, it took the notion into a digital realm), and developed the students' meta-cognition of how their actions and records of actions were crucial to their development as teachers. In this sense, an unanticipated aspect of the study was the evolution of a dialogic dimension involving self, peers and tutors.

Whilst two 2-hour Technical Workshops were devoted to the development of the Digital Professional Portfolios, including exploration of and reflection on current digital presences and student identity, the status of the majority of portfolios by the end of the semester revealed that most students would not or could not further populate their sites independently. Possible reasons for this include: *educational fatigue* (the stress of final assessments), lack of time (prioritisation of work, family, and university), no immediate summative assessment advantage of working on the portfolio (if it does not “count” for my grade, it is not a priority), or any combination of these. The students who did further populate their sites were asked what prompted them to do so, and they explained that they saw the benefit and power of both the tool *and* the process: not only the showcase capacity (that is, having something robust to present to a prospective employer) but also in their development

as teachers. It also became apparent that students who added to their portfolios had ready access to evidence and artefacts – they had been doing volunteer teaching, tutoring, mentoring, childcare, and coaching of their own volition – and so had content to upload, critique and curate.

What is evident from the sample of pages constituting Figures 7a – d is the degree of creativity and thought that went into the design of each page. This indicates that a tool such as *Weebly*, which students can customise to their needs and tastes, facilitates students' capacity and motivation to design and grow their digital professional presence. This adds a personalisation "ownership" dimension to the 3C process, which is acknowledged as important in students "predicting social presence" (Garrett, Thoms, Alrushiedat, & Ryan, 2009, p. 203) as well as presenting themselves as *real people* (Garrett et al., 2007). Although the basic framework covered the same components for every student, no two portfolios were identical: the DPP prompted students to develop their professional identity not only through the evidence they curated but also by their choices of layout, colour, graphics, font, and navigation – in effect their *personal digital branding*.

This pilot study provided a valuable snapshot of the potential of digital professional portfolios in engaging pre-service teachers to cross the threshold from *student* to *teacher*. Students were challenged to critically examine their personal digital identity (as evidenced on Facebook, Google, and even LinkedIn) and to then consider how to portray themselves as professionals. The biggest challenges for participants were twofold: first, determining what could make them more employable than other graduates (scaffolded by the elevator pitch and capacity statement activities); and second, collecting-critiquing-curating evidence against the professional standards. The students seemed to be polarised: those who had a plethora of extra-curricula/volunteer/paid employment experience from which to draw; and those who believed they had nothing tangible or relevant to contribute. This was not evaluated as a deficit; rather, the tutor enthused about the opportunity to envisage their possible self, find their strengths, and create a plan for self-actualisation: What volunteer teaching could I do? What tutoring or coaching could I do? What suite of three electives should I choose to position myself as a "specialist teacher"? Which professional association should I join?

The point was made to students that their DPP, indeed their identity development – is a lifelong journey: the 3C process needed to be maintained at regular intervals and/or as new evidence could be demonstrated, for the remainder of their degree and beyond. The habit of mind to critically reflect upon and evaluate learning experiences of all kinds is crucial for these students to maximise their professional development, employability, and resilience as they transition into the profession.

Two limitations should be mentioned. First, due to the limited timespan of the pilot study, students' DPPs did not transition from being "an archive to being a fluid self-portrait" as Bennet and her colleagues (Bennett, Rowley, Dunbar-Hall, Hitchcock, & Blom, 2014, p. 12) reported in their study; however, there was evidence of students adopting a more future-oriented mindset. The success of this pilot is deemed to be "relative" as not all students populated the professional standards with evidence or updated their CV as a result of the Technical Seminars. The relative success of this pilot study may be attributed to two primary approaches: the tutor of all classes (also a member of the research team) was developing her own DPP using the same tool and process; and the creation and population of the DPP was embedded into an existing professional studies unit that allowed the tutor to position the experience within the context of the students' theory and practice. The larger study will seek to engage all tutors in the development of a DPP, with the support of a number of sample DPPs from previous students.

The second limitation concerns the reliance on survey-based responses. With regards to the students who were ambivalent or reluctant towards the adoption of a DPP, it is thought

that, as with every innovation, adoption will always be matched to the participants' readiness for the experience and mitigated by their beliefs (Hall & Hord, 1987). Further, the high affirmative responses to the survey statements indicate that the process of creating the DPP has a beneficial impact on the development of professional identity and the associated ability to recognise one's strengths and interests in line with experiences and aspirations. However, approximately one-quarter of the cohort were non-committal, perhaps not in a headspace to reflect upon the statements, unsure as to the meaning of the statements, or unconvinced by the value of the DPP exercise. This would only have been made clear by follow-up interviews, which will be incorporated into the extended project.

Currently the research team is working on a university-funded, 12-month project that extends the scope of this pilot project in length of implementation time, sophistication of the web support, cross-faculty involvement, and evaluation of student reflection. Approximately 100 second year Bachelor of Education students and 1500 first year engineering students are participating in the current project, and a parent web-site has been developed for each cohort to support them in collecting, critiquing, and curating evidence against the relevant professional standards (such as the AITSL Professional Standards for Teachers (AITSL, 2011) and the Stage 1 Competency Standards for Professional Engineers (Engineers Australian, 2011).

The parent website provides examples of evidence against each standard with annotations and links to support materials. The current project is being viewed and critiqued through multiple lenses as the researchers seek to capture the complexity of promoting reflection, developing a professional story mapped against industry standards, and imagining future selves.

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