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Towards the development of a team learning theory for information systems: Implications for universities, academics, and academic developers

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Transitioning From Print-Based To Digital Teaching Portfolio Assessment in a Foundations of University Learning and Teaching Subject

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Abstract

The concept of a teaching portfolio in higher education is not new. However, for many teaching staff the concept of a digital or electronic teaching portfolio is very new - a perspective that cannot be ignored. Academic developers have a role to play in their institutions in making the concept of a digital portfolio understood by staff, and making transparent the many and varied options available to them to develop their own electronic portfolio. At one Australian university the elaboration and application of a teaching portfolio as a capstone assessment task has been embedded in a stand-alone Foundations of University Learning and Teaching subject as a way of documenting staff learning about their teaching as they progress through the semester-long subject. This paper focuses on the processes and application of guiding staff to make the

transition from a print-based to a digital teaching portfolio, and makes recommendations for introducing a digital teaching portfolio into a Foundations subject for academic staff new to teaching and learning in higher education.

Keywords:

Introduction

In this paper we use the terms digital portfolio and e-portfolio synonymously to mean “a collection of work, objects or items selected by the portfolio author that provides evidence of a particular nature for a particular purpose” (Hallam, Harper, McCowan, Hauville, McAllister & Creagh, 2008, p. 3) which is presented in a digitised format – in our context in this paper stored on portable media such as CD, DVD and thumb drives or memory sticks. It is well documented (Stefani, Mason, & Pegler, 2007) that university staff may benefit from the use of digital portfolios, given their many and varied uses and that this in turn may help students develop digital portfolios as well. At our university we have designed a Foundations of University Learning and Teaching subject that has within in a capstone assessment task featuring a print-based teaching portfolio. Late in 2008 we had decided to offer staff the opportunity to present their teaching portfolio in a digital format. The question as to how to *best* provide academic staff with the skills to develop a *digital* teaching portfolio was the basis for many discussions amongst our teaching team. Suggestions such as a single, one-off workshop were dismissed in favour of a meaningful and developmental approach throughout the duration of the subject that helped staff to acquire the skills to present their portfolios in an electronic format. This paper provides details about the Foundations subject, why and how we have used PowerPoint™ to help staff make the transition from a more traditional print-based assessment task to a digital format within the subject, and makes recommendations relevant to the introduction of a digital portfolio as an assessment task in a learning and teaching development subject.

Background

The Foundations of University Learning and Teaching subject is designed as a stand-alone subject for academic staff new to university teaching. Spanning 14 weeks, the subject has

been planned as the first in a sequence of four subjects which could form a Graduate Certificate in Higher Education in the future. The primary focus of the Foundations subject is to introduce participants to the theory and practice of teaching and learning in higher education, and to enhance the individual academic's teaching effectiveness. Several theoretical frameworks underpin this subject – the concept of reflective practice, critical reflection, and peer review and feedback (Bell, 2005). The requirement for teaching staff to attend this subject is embedded in a clause in the university's Recruitment and Selection policy which requires all fulltime continuing staff to complete the subject unless they hold a Graduate Certificate in Higher Education or has less than five years experience in teaching in higher education. In reality, staff enrolments in this subject include staff on both short-term and fulltime continuing contracts with a range of teaching experiences.

The subject design is based on a two-module structure. The first module provides immediate and practical assistance to enable teachers to begin their exploration of teaching and learning in higher education. The core workshop which opens this module is a whole-day event. Subsequent sessions in the form of workshops are run in the evenings from weeks one through to week six. The second module is an independent study module comprising peer observations using peer support colleagues (Bell, 2005) who provide constructive feedback on observed teaching sessions, and a series of short assessment tasks which focus on the development of critical reflection processes amongst participants. Staff are also asked to develop a beginning philosophy of teaching statement which draws on their learning in the subject and their reflections on their teaching during the semester. A small teaching portfolio is used for the presentation of individual teachers' learning at the end of the subject. With the first cohort this portfolio was presented as a print-based document using a prepared template.

Concerned about issues of portability and wanting to make use of digital technologies currently available to staff, we decided to make the transition in 2009 from a print-based to a digital portfolio format using PowerPoint™. Our rationale for using this software was based on the fact that it is widely available to staff and commonly in use across universities. Presentations can be saved to USB sticks, CD, DVD and/or placed on faculty or university servers. Going digital with a teaching portfolio is also a way to enhance a less explicit outcome for teaching staff – the development of “21st century literacies, or multi-literacies” – the ability to combine text, graphics, sound and video and to understand the processes involved in combining some or

all of these media for presentation and communication purposes (Hartnell-Young & Morris, 2007, p. 14).

In Week 12 of the semester, participants and their peer colleagues are invited to a recall session to provide feedback to subject facilitators and share their experiences of the subject. This feedback together with a written survey completed by subject participants is used for subject improvement. Staff who have successfully completed the subject are recognised at a special Rewards and Recognition event held annually at the university with the expectation that they will create conversations about their learning in this subject with others and encourage their peers to enroll.

The subject is also blended in several ways. The use of a subject website on a BlackBoard™ platform acts as an overall support for the face-to-face mode of delivery used in the first module. Additionally, different technologies are blended. These include the USB stick that contains all of the resources for the subject, as well as the tools that are part of the website that participants are expected to use – the digital drop box for posting of assessment tasks, the discussion forum for sharing of reflections about teaching by participants and their facilitators, and individual blog spaces where participants can choose to use to record their thoughts, ideas and reflections on the subject and their teaching. The authors encourage participants to draw on their blog postings to develop their portfolios but only a few of the subject participants have made use of the software for this purpose.

Literature Review

E-portfolios serve numerous purposes. Although our purpose in using an e-portfolio in this Foundations subject is for assessment, its long term goal is far more reaching. Hallam et al. (2009, p. 56) make the claim that:

...the implementation of e-Portfolios in the curriculum will only be effective if they are integral to the learning activities or the assessment and if they have a specific and integrated purpose. The introduction of e-Portfolios as a learning or assessment activity therefore requires academic staff to consider the learning goals for the subject and to subsequently evaluate the extent to which there is congruence between learning activities, assessment and learning outcomes.

The scaffolding of tasks that required deep reflection and which culminated in such outcomes as the development of a philosophy of teaching, as in our learning design of the subject demonstrated congruence. Several types of portfolios have been identified: “learning” and “personal development” (Hallam et al., p. 4); “activity-reflection” (Richards, 2005); and “emergent, virtual and practitioner” (Leggett & Bunker, 2006). It seems that the latter type of portfolio applies to the Foundations subject. While not the intent of this paper, it raises questions as to how graduates of the Foundations subject will use this initial knowledge of digital portfolios in the future.

Several frameworks have been proposed that guide the development of portfolios and implicitly the teaching of such. One such framework focused entirely on the introduction of student portfolios across an institution is proposed by Love, McKean and Gathercoal (2004) who suggest five “levels of maturation” or a pathway towards full implementation of student e-portfolios within an institution:

- Level 1 – scrapbook or collections of assignments, awards, etc. received by students over a period of time;
- Level 2 - curriculum vitae which provides a template to guide students as to content used for employment purposes or as evidence of completion of a program of studies;
- Level 3 - curriculum collaboration between student and faculty which provides a template and which provides opportunities for students to choose which content to put into the portfolio. The shift between Level 2 to Level 3 is marked by the use of formative and summative feedback on content, and access is enabled to both employers, teachers and others nominated by the student;
- Level 4 – mentoring leading to mastery which build on Level 3 portfolios but also enable multiple opportunities for students to receive feedback and adjust the content of the portfolio based on feedback from mentor/s;
- Level 5 – authentic evidence as the authoritative evidence for assessment, evaluation and reporting, building on previous levels of maturation, where the e-portfolio is the single mechanism by which mastery over content, standards of achievement, etc. over a period of time is on display and accessible by students, teachers and employers.

These authors emphasise that from Level 3 onwards the functionality of the e-portfolio changes and the organising schema for the portfolio is either a set of curriculum requirements or

educational standards or both (pp. 28-29). The print-based portfolio in our instantiation of portfolios is reflected in Level 2, where a template assists participants to organise and construct their portfolios. In our transition to a digital portfolio there are aspects of Level 3 maturation in evidence, in the enabling of some choice for participants in the organisation and selection of artefacts facilitated by the capabilities of Powerpoint™.

Further, Avraamidou and Zeemal-Saul (2002) report on several studies which list outcomes arising from the use of digital portfolios – they encourage improvement, motivate involvement in learning and self-evaluation, and promote higher level thinking. Documentation using the concept of hypermedia also offers better management, storage, and distribution. Pelliccione and Dixon (2008) affirm that the process associated with the production of a digital portfolio enables students to become stakeholders in their own progress and, in the longer term use of e-portfolios, drivers of their own development.

Building the capacity of reflection to enhance teaching and student learning (Bell, 2005) was another significant framework. Groom and Maunonen-Eskelinen (2006) note the unifying theme in the emerging corpus of international literature on the use of portfolios was reflective practice. We concur with Avraamidou and Zeemal-Saul (2002) who, in defining the meaning of reflection, cite the words of Dewey (1933, p. 6): “Reflection is an active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds supporting it and future conclusions to which it tends”. These authors further review the literature to confirm that many new teachers hold well-established practices about teaching and that through the process of reflection these views could be challenged and made explicit, while at the same time considered alongside contemporary approaches to teaching. This indeed was our challenge as academic developers - how to best use reflection to promote growth. It was assumed that the academics enrolled in the Foundations subject could benefit from a challenge to entrenched views or processes – if not to change their practice at least to confirm all or aspects of their practice.

Reflection became the cornerstone of the learning design in the Foundations subject. Groom and Maunonen-Eskelinen (2006, p. 293) note that the ‘impact of continuous change processes in education requires teachers to continually refresh and develop their skills’. However, although we have provided a process and a way of documenting their ability to adapt to change, Leggett and Bunker (2006) caution us in the expectation that the stresses of teaching

in a modern university may militate against this occurring. The depth of reflection in the tasks in the Foundations subject increased from the first task to the final task, but it was from a synthesis of these reflections that we expected the beginnings of a philosophy of teaching would emerge together with a strong articulation of this philosophy into individual's teaching practice.

Designing a learning environment in which assessment, curriculum and active learning strategies align and promote motivation and reflection seemed imperative if academic staff, the learners in the Foundation subject, were to be themselves engaged in learning. In contrast to the key learning outcomes of the subject, which were to be achieved through reflective practice and later assessed, knowledge of, and the process of building a digital portfolio was a non-assessed outcome. Building a portfolio was essentially about collecting evidence of the achievement of the learning outcomes, and presenting these through a dynamic medium. The intellectual content of the portfolios whether print-based or digital and the related issues of identifying quality, selecting appropriate evidence, and developing standards were associated with the outcomes and assessment of portfolios.

It was expected that participants would want to learn how to 'build' a digital portfolio in order to show that outcomes had been achieved in an individual and unique way. The cultural theorist Henry Jenkins (cited in Reese and Levy, 2009, p. 3) uses the term 'convergence culture' to explain a view of motivation and one we support:

Convergence culture represents a paradigm shift – a move from medium-specific content toward content that flows across multiple media channels toward the increased interdependence of communication styles, toward multiple ways of accessing media content, and toward ever more complex relations between top-down corporate media and bottom-up participatory culture

Various studies of teachers endorse the motivational power of digital portfolios (Kankaanranta, 2001; Pelliccione & Dixon, 2008). Linking the outcomes of the subject with the vehicle and mode of presentation – a portfolio - laid the impetus to learn about portfolios. Such a view was not without consideration of the resistance alongside the 'unmitigated optimism' (Tisani, 2008). Motivation to build a successful portfolio would be implemented and maintained through three strategies: all the assessment tasks would be meaningful; a developmental

approach to teacher learning would be adopted; and technology would be the affordance to facilitate meaningful learning.

Meaningful learning although developed by Ausubel (cited in Lefrancois, 1997) in relation to expository style teaching and therefore verbal learning, is used here to refer to the association that the learned knowledge of what constitutes a digital portfolio would be better understood by staff because of its association with their personal experience of collecting and categorising data (evidence) and how this could best be shown. The new knowledge (digital portfolios) is then stored in the brain with associations and relationships obtained through the analysis and critical reflections of the teaching practice experiences. Participants may be inserting pictures, creating animations and linking files to demonstrate the growth and changes made to their own personal teaching and learning practices. Meaningful learning is created when associations are personalised. Our expectation as academic developers was that new knowledge acquired by staff studying this subject would take the form of changes made to their teaching practice. Further, these changes would be presented through reflection and documented through the portfolio. And, as meaningful learning is also a constructivist approach (Lefrancois, 1997; Stefani et al., 2007), it is the learners themselves who make the associations and build others in authentic ways and make decisions about their own philosophy of teaching and their teaching practices over time. A constructivist approach may, but not necessarily, imply a developmental approach to the construction and continual building of knowledge.

A developmental approach framed the assessment strategy and therefore each assessment task in this subject, as well as the learning about digital portfolios necessary for the final assessment task. We wanted staff to begin with a simple concept of portfolios and through experience extend and build on this concept, eventually understanding its complexity. It is easy for any portfolio to grow like topsy when there is no sound structure and purpose resulting in the application and potential to which it may be suited overlooked. It has previously been noted (Stefani et al., 2007, p. 58) that if e-portfolios “become a jumbled collection of photos, artefacts, unconnected ramblings and other media-rich items, they may have been ‘fun’ to assemble but they have lost their educational value”. To prevent such possible chaos we provided a deliberate and planned structure so staff could layer their own and new understanding of a teaching portfolio and the more familiar functionality of PowerPoint™. Each assessment task was not an end in itself. Rather, the tasks were scaffolded so that the skills, knowledge and values acquired

in the first task formed the basis for the subsequent tasks. Concurrently, academic staff were also learning about the functionality of PowerPoint™ to create digital portfolios. What was less explicit was the forging of associations between the two. In short, this meant that a developmental approach to learning about digital portfolios and their own teaching practices was essential in our learning design.

Integral to the developmental nature of learning about teaching and the learning about digital portfolios was our understanding of the interaction of time and the process of reflection. Time is rarely mentioned in the literature beyond reference to monochromic time. There seemed the need for us as academic developers to acknowledge an internal personal growth time needed to process ideas and concepts, and an external formalised assessment time in which staff presented their accomplishments up to a particular date and time. The physical time demanded by each of the assessment tasks in this subject required considerable “real time” to complete, but the actual time required to synthesise the meaning and outcome from reflections required a time that lay outside a formalised timetabled subject schedule. When learners engage in reflection they enlist thinking processes which enable them to link different pieces of information, contrast different pieces of information and combine different pieces of information.

Groom and Maunonen-Eskelinen (2006, p. 292) remind us that the classroom is a “complex and multifaceted context that requires the teacher to continually review and reflect on their work” in order to make conscious their knowledge. These linking, contrasting and hypothesing processes continue in the background while each new assessment task is physically completed. Denying learners need for both these internal and external times may limit their learning. Time was central to the scaffolded nature of the three main reflections in our learning design. This meant the learning inherent in each task, an outcome from reflection, was the basis for the following task. The holistic developmental approach was in congruence with the internal personal growth time needed for learning.

One means of providing support for the management of time in the reflective process was found in technology. Utilising the affordances of technology—in this case the blog tool—staff in this subject could record the many “moments’ thoughts”. These thoughts became the data for further reflection and synthesis of ideas about themselves as teachers. Staff could draw on these to develop a teaching philosophy and as evidence for claims made in their digital portfolio.

Adopting technology appropriate to digital portfolios was intended to be one aspect to motivation as already noted. We concur with Stefani et al.(2007, p. 58) that if learners “are given the tools to control the look and feel of their portfolios, to create dynamic, innovative presentation of their work and [reflections], they are more likely to engage with the process beyond the formal [subject] requirements”. Also important is consideration of the growth trajectory of staff to use and competently employ features of PowerPoint™. We acknowledge that developmentally each teacher may be at a different point in their understanding and use of this software or other digital tools. Transitioning from print-based to digital portfolios enables teachers to better demonstrate the links associated with their learning, as learning cannot always be presented linearly.

The Transitioning Process

Table 1 articulates the transitioning process from print-based to digital portfolios that occurred within the Foundations subject. The first column of the table indicates the process of introducing the concept of the portfolio and the elements of the portfolio, which remained unchanged from the print-based format - we still required a teaching philosophy, description of their discipline, etc. The second column shows the resources we provided for staff to develop their portfolio for each of the elements. The third and fourth columns explain the requirements for each of the elements in the print and the digital format, showing in the fourth column the changes that were made to the digital format. The fifth or final column of the table provides additional comments and articulates changes to the whole transitioning process.

Process and elements	Resources	Print-based portfolio	Digital-based portfolio	Comments
<p>Process</p> <p>Introduction to the concept of a portfolio</p>	<p>Initially, one hour session within the core workshop for the subject, demonstrating the concept of a portfolio as a “box under the bed” from which artefacts are taken and used as evidence of accomplishment or achievement. A print template was introduced briefly.</p>	<p>Further exploration in week four of the semester was made whereby a print template was provided to staff which tightly structured the portfolio and encouraged a “dumping” of evidence. This encouraged little reflection and a repeating of evidence and information.</p>	<p>Introduction to portfolios was made in week one of a 14 week semester. The concept of a portfolio and the final assessment task in which the portfolio was the vehicle, was made more explicit. The same hands-on session delivered for print-based portfolio remained.</p> <p>A hands-on session using 15 functions of PowerPoint™ was delivered using stimulus questions and modelling. One handout listing background images, CD, clipart, copy page, font colour, highlighting, hyperlink, labels, new page, on-screen show, order of slides, paper size, scanned documents, web page.</p>	<p>We emphasised the link between assessment and how doing it through a digital portfolio would provide more scope to show evidence of learning. We consciously began building the conceptual side of a digital portfolio by relating this to <i>all</i> assessment tasks in the subject, and not just the final task.</p>
<p>Element 1</p> <p>Table of contents</p>	<p>All elements of the portfolio were listed in the Foundations subject guide and final assessment task.</p>	<p>We provided a sample of a print portfolio in the scheduled session in week four.</p>	<p>The sample was a quality product, used again and maintained, as was its sequence within the subject.</p>	<p>A demonstration was made on how to create hyperlinks to a well-constructed table of contents.</p>

<p>Element 2 Teaching demographics</p>	<p>An example of a table was provided which showed subject, student numbers, semester taught.</p>	<p>Participants completed a table using guidelines provided</p>	<p>No changes were made.</p>	<p>Multi-media suggestions were made and demonstrated as evidence to the claims and summaries of an individual's teaching.</p>
<p>Element 3 Teaching philosophy</p>	<p>Readings, websites, examples of other philosophy of teaching statements</p>	<p>Teachers invited to attend a Philosophy of Teaching workshop scheduled as campus-wide workshop. No time allocated in other sessions to incorporate this significant element.</p>	<p>Specific three hour session allocated to developing a philosophy of teaching statement, using a workshop-based approach. Workshop feedback indicated enhanced understanding about philosophy of teaching statement structure and content.</p>	<p>It was necessary to dedicate a session to developing a teaching philosophy and further to explain how this could be used in a digital portfolio to link to other elements of the portfolio.</p>
<p>Element 4 Reflection on teaching with subject facilitators (observers)</p>	<p>Observation schedules were provided.</p>	<p>Two observation schedules adapted from the skills approach to teaching used. All were to be scanned and submitted in the assessment task.</p>	<p>Two observation schedules were modified to better reflect a focus on how teachers addressed student engagement.</p>	<p>Participants were now open to presenting documents in ways other than using a regular scan to provide evidence of teaching, planning and feedback. The newer schedules provided a stronger focus on activity and engagement.</p>

Element 5 Reflections on teaching with support colleagues	Support colleagues were specifically selected and matched with participants across disciplines.	Participants were responsible for making contact and negotiating times for observations.	No changes were made	Participants were now open to the incorporation of other media such as photos as evidence of the changes to their practice.
Element 6 Reflections on observations of support colleague's teaching	No additional resources required	Participants listed attributes from support colleague's practice they would like to use.	No changes were made. However we encouraged deeper reflection to be evident through the functions of PowerPoint.	Participants could now be creative in how they might present their observations of their colleague's teaching.
Element 7 Critical reflections and overview from all feedback	No additional resources required	Participants were inclined to present this as list of positive observations.	Tables, clips and photos appeared in the portfolios.	Where once the critical review was text, the opportunity to create web links to resources and theory and present summaries in different ways is possible.
Element 8 New learning and understanding about teaching	No additional resources required	Statements were made with some evidence of new learning and its relationship to theory	Greater opportunity to present evidence of new learning and its relationship to theory differently.	Participants can be creative and dynamic in the presentation of their own new learning about teaching and how this marries with, concurs or is an application of theory.

<p>Element 9 A personal evaluation of teaching competence</p>	<p>No additional resources required</p>	<p>Participants identified strengths and weaknesses and how to address the latter through text.</p>	<p>Participants identified strengths and weaknesses and how to address the latter through links and text.</p>	<p>Participants have an opportunity to present the past and the present in response to showing evidence of their teaching competence in other formats than text.</p>
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Table 1: The Transitioning Process from Print-Based to Digital Portfolios

The two centre columns in the table summarise our expectations in the print-based and digital-based iterations, and the last column is a comment on the all-too-important process to enable the transitioning to occur. As noted earlier in this paper, attending to “real time” was significant in developing the processes to support the transition. In the initial offering of the subject we designed the portfolio assessment task to include elements of a traditional teaching portfolio, among them a table of contents page and information about the classes taught by staff. This print-based view provided its own limitations, particularly the linearity of the text format. Despite this limitation we believed it was a suitable structure for staff with limited or no knowledge of teaching portfolios. The feedback from staff at the end of the subject confirmed the initial lack of understanding of the nature of a teaching portfolio. One participant commented she had no idea what an e-portfolio or portfolio was beyond the concept of an artist’s collection of his best work and perhaps that it would be done on a computer. Another teacher indicated some prior knowledge about portfolios believing them to be a sort of digital diary where evidence for promotion or teaching feedback would be kept.

PowerPoint™ has the potential for embedded and richer additions to a portfolio all of which can be used when academics are developmentally ready to engage with these functions. One teacher commented that she thought a digital portfolio using this software might be too dependent on series of bullet points and was worried about it appearing “gimmicky”. After an additional session on using PowerPoint™ to build a portfolio, she realised its potential to add more through hyper linking to validate claims and to present a more visually stimulating document.

When we first offered this subject, teaching portfolios were introduced very briefly in the whole-day workshop, and discussed later with staff on different occasions throughout the semester. Although participants submitted a portfolio 14 weeks after its introduction as required, we felt that had the concept been introduced differently and staff had been given more planned opportunities earlier in the subject to think in what way the capabilities of PowerPoint™ might assist them present particular information and reflections. By introducing the digital portfolio concept at the very beginning of the subject more time would become available to consider the constraints and develop responses on how best to overcome these. In the print-based version staff

complied with the table of contents, but did not fully embrace the concept of a portfolio. When we made the shift to digital portfolios we did so earlier in the subject schedule and created a stronger link to assessment. Issues of ownership, multimedia components, reflection, evidence, and multiple presentations are likely to become more significant in the digitised format (Stephanie et al., 2007) as they did for our staff. An additional benefit to staff is the preparation process it offers those who may apply for promotion — it becomes the enabler for clear categorical thought to write to specific criteria. Staff thinking and learning related to the selection of evidence for inclusion in a portfolio to demonstrate their learning and their teaching acts as a simulation in preparation for such events as promotion or teaching awards.

Conclusion and Recommendations

The interaction of the functionality of PowerPoint™ and teachers' technical competence to produce creative and dynamic digital portfolio with reference to evidence is about to be assessed and evaluated for the second time in this capstone subject. In the future the university will be examining e-portfolio systems for students and staff and we may be in a position to make the transition from this presentation software to a broader electronic portfolio system. As academic developers we set out asking how competence in the development of e-portfolios that demonstrated their learning can best be achieved by academic staff. Embedding the learning in a cumulative assessment approach throughout the subject along with a model of digital portfolios was essential. Planning a number of processes, some of which were to work concurrently, was essential to achieving this 'how' question. Some staff queried what should be included and excluded from a portfolio but with discussion and focussed questioning related to the purpose of the portfolio, the audience, and the table of contents we provided, this was resolved. The intention of this paper was to document and inform our readers how a team of academic developers at one Australian university enabled academic staff to become familiar with portfolios but more importantly with digital portfolios. The planned and structured processes described and analysed in this paper aligned with the assessment tasks in a Foundations of Learning and Teaching subject provided the means for the transitioning from print-based portfolios to digital portfolios.

In conclusion, we offer our readers a number of recommendations for introducing a digital portfolio into professional development courses for teachers:

1. Portfolios must be considered as integral to the course or subject of study and not positioned outside the subject. For example, providing a once-only workshop is insufficient for staff to begin their own portfolio development, given the complexity and different purposes of portfolios. Introduce the concept of a portfolio and its key components in the initial sessions of the subject. Progressively providing opportunities for staff to build skills in digital portfolio development has implications for the learning design of the subject and impacts on scheduling and timing of assessment tasks.
2. Design concurrent opportunities across the whole subject for staff to (a) build skills in reflection about their teaching which, in turn, builds their evidence of learning within the subject, and (b) skills in the use of the digital tool for portfolio development.
3. Consider the purpose of the portfolio. In this subject, the emphasis is on a *learning, or developmental* portfolio, to reflect its primary purpose of documenting growth and change in staff learning about their teaching practices. The purpose of the portfolio will impact the way it is structured, the evidence that is gathered and the skills that staff need to complete the portfolio. We focused initially on learning theory and reflection processes, and enabled participants to record their thoughts progressively and ideas about learning as they move through the subject.
4. Provide a workshop on the development of a Philosophy of Teaching statement by all participants. The Philosophy of Teaching statement is the cornerstone of the teaching portfolio task. These statements grow and develop over time. Having staff begin to develop a statement of teaching philosophy early in their teaching careers is a positive step towards their development of a sense of “self” as a teacher.
5. Offer specific skills sessions for staff not fully acquainted with the level of sophistication of the software being used as a medium for a digital portfolio. In our additional session described above, we focused on developing an outline or storyboard, adding graphics, sound, movies and internal and external hyperlinks. We have found the text by Montgomery and Wiley (2008) particularly useful as a guide in this area.

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