

Digital scholarship powered by reflection and reflective practice through the use of an ePortfolio approach to course design in Higher Education

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Current online information environments and the associated social and pedagogical transactions within them create an important information ecosystem that can and should influence and shape the professional engagement and digital scholarship within our learning communities in the higher education sector. Thanks to advances in technology, the powerful tools at our disposal to help students understand and learn in unique ways are enabling new ways of producing, searching and sharing information and knowledge. By leveraging technology, we have the opportunity to open new doors to scholarly inquiry for ourselves and our students. While practical recommendations for a wide variety of ways of working with current online technologies are easily marketed and readily adopted, there is insufficient connection to digital scholarship practices in the creation of meaning and knowledge through more traditional approaches to the 'portfolio'. In this context, a review of the portfolio integration into degree programs under review in the School of Information Studies led to an update of the portfolio approach in the professional experience subject to an extended and embedded e-portfolio integrated throughout the subject and program experience. This was done to support a strong connection between digital scholarship, community engagement, personal reflection and professional reflexive practices. In 2013 the School of Information Studies established CSU Thinkspace, a branded WordPress solution from Campus Press, to better serve the multiple needs and learning strategies identified for the Master of Education programs. The aim was to use a product that replicates the authentic industry standard tools used in schools today, and to model the actual ways in which these same teachers can also work in digital environments with their own students or in their own professional interactions. This paper will review how the ePortfolio now provides reflective knowledge construction, self-directed learning, and facilitate habits of lifelong learning within their professional capabilities.

E-learning in higher education

Distance education and distance learning at Charles Sturt University, once undertaken by one-to-one correspondence between learners and teachers has been radically transformed into online learning, or e-learning, through the use of learning management systems and other web based or digital tools. Now this type of education is characterized not so much by 'distance' as by the mode of 'electronic' or 'e' learning environments that is internet or web-based, and provides ongoing challenges for the researcher investigating professional contribution (i.e. teaching or educating) in higher education (Thompson, 2007, p. 11).

Distance education has evolved through many technologies, in tandem with the affordances these technologies provided, and each mode or 'generation' has required

that distance educators and students be skilled and informed to select the best mix(es) of both pedagogy and technology (Anderson & Dron, 2011). The current generation of academic degree programs which are delivered fully online (rather than face-to-face) through the use of information and communication technology (ICT) are doing more than simply delivering content through asynchronous distance education modes. Rather, there has been a strong move to creating pedagogically enriched learning design within technology-rich contexts to support and improve learning experiences (Ally, 2004; Kim & Bonk, 2006; Siragusa et al., 2007; Beetham & Sharpe, 2013).

Digital scholarship

Learning in a digital age requires practitioners who understand education imperatives in local and global settings, and who can demonstrate an agile response to novel technologies that may catalyze learning. The proliferation of digital content is part of the change in scholarly communication. Digital literacy can enable digital scholarship, but the nature of digital scholarship is dependent on emergent practices, processes and procedures of scholarly communication conducted via digital domains. While knowledge generation and sharing is deeply rooted in academic scholarship, it is necessarily being transformed in the parameters of enactment through digital scholarship contexts, with disjuncture between informal processes of scholarly communication and formal systems of dissemination and publication for knowledge dissemination (Goodfellow, 2013).

Digital scholarship is valued for openness or open access within the boundaries of open data, open publishing, open education and open boundaries (Pearce et al., 2012; Weller, 2011), and for utilising participatory or collective ways of thinking (Jenkins et al., 2009; Bull et al., 2008). Our work as educators has to centre on helping to meet the scholarship and future learning needs in courses/programs by fostering a culture of enquiry within a sustainable digital learning environment that is shaped by the ubiquity of information, globally responsive pedagogical practices, and driven by collaboration and informal learning in multiple access points and through multiple mediums. The impact of technology has emerged as complicated and disruptive while being highly relevant and transformative. Thanks to advances in technology, the powerful tools at our disposal to help students understand and learn in unique ways are enabling new ways of producing, searching and sharing information and knowledge (Conole, 2013). By leveraging technology, we have the opportunity to open new doors to scholarly inquiry for ourselves and our students.

Reflection on practice

A key area in the development of the professional practitioner is the ability to reflect on practice as the basis for learning, with the effectiveness of this practice having been confirmed through research to be linked to inquiry, reflection and continuous professional growth (Killeavy & Moloney, 2010). Reflection can be understood as a process of internal dialogue facilitated by thinking or writing and through an external dialogue and reflection together with others (Clarke, 2003). Reflective practice writing is creative, a way of gaining access to each practitioner's deep well of experience not always accessible to everyday channels and is a valuable mode of expressing, sharing,

assessing and developing professional experience (Bolton, 2005). By recognising and taking responsibility for personal and professional identity, values, action and feelings the student undertaking reflection within the constructs of subject and program requirements is demonstrating a willingness to stay with uncertainty, doubt and questioning in order to engage in spirited enquiry leading to constructive developmental change and personal and professional integrity based on deep understandings (Bolton, 2010, p. 7). Knowing what to reflect upon is as critical a part of the educative process as the reflection action itself, perhaps explaining why reflective practice has become a standard in initial and continuing professional education and development. This is a pedagogical approach that draws together reflective practice and reflexivity (finding strategies to question our own attitudes, values and limits of our knowledge — Bolton, 2010) as a state of mind to empower the process of learning.

In professional programmes in particular, it is useful if students keep a reflective journal, in which they record any incidents or thoughts that help them reflect on the content of the course or programme. Such reflection is basic to proper professional functioning. The reflective journal is especially useful for assessing ILOs (intended learning outcomes) relating to the application of content knowledge, professional judgment and reflection on past decisions and problem solving with a view to improving them.

(Biggs & Tang, 2011, p. 261)

It is perhaps simplistic to migrate a pre-digital taxonomy to a digital environment and to ignore the function of and relationship to digital scholarship for the educator or higher education academic. When it comes to online learning, it is understood that interaction with others (peers and instructors) is a highly important variable in successful learning experiences within the online learning environment, particularly when coupled with the need for students to achieve self-regulation between their own knowledge/experiences and the content of a subject (Cho & Kim, 2013). This reflective practice, which assists in assembling knowledge and experience in meaningful ways, can be facilitated by the use of an ePortfolio, and may facilitate independent learning, development of identity, a sense of empowerment, greater awareness of self, and promote active engagement in future oriented professional practice (Rowley & Munday, 2014).

The digital information environment in which an ePortfolio is situated is one that demands a new knowledge flow between content and digital connections. While academics may consider themselves to be pedagogically driven in their learning and teaching, the availability of technologies to support different models of learning strongly influences what kinds of pedagogies will now emerge in terms of course content, subject dialogue and conversation. As McLuhan (1964) first argued, technologies also influence and define the usage, in this case the pedagogy instantiated in the learning and instructional designs (Anderson & Dron, 2010). Academics (as teachers) need to support and nurture learners to learn within connected and collaborative learning environments, to lead purposeful and corrective discourse in relation to multiple information environments as part of the construction of meaning and understanding (Garrison, 2015).

Context for introduction of the ePortfolio

During 2012–2013 a comprehensive Course Review of the Master of Education (Teacher Librarianship) was undertaken, as part of the 5-year cyclic renewal process for an authorized Australian University (under the Tertiary Education Quality and Standards Agency [TEQSA] Act) to self-accredit each degree program that leads to a higher education award that the provider confers.

As part of the face-to-face and virtual industry-wide focus-group consultation processes with key stakeholders across Australia and New Zealand (principals, teacher librarians, librarians, system leaders, teachers, education consultants) a key finding in focus group results emphasised a need for a *substantial post-graduate foundation in connecting information knowledge networks and digital innovation in the P-12 and tertiary education environments*, where the information discipline aspect is foundational to improved education pedagogical practices in digital environments.

As a result of this comprehensive review, the Master of Education (Teacher Librarianship) underwent a substantial change in relation to portfolio use. At the same time a new degree program was developed called the Master of Education (Knowledge Networks and Digital Innovation) — MEd(KN&DigInnov).

A unique feature of both degree programs was a review of the digital networked participatory learning experiences, collaborative activities, assessment practices, and the incorporation of reflective approaches to discipline learning and workplace learning experiences. These critical elements of online learning and teaching of necessity placed an emphasis on interaction between students as well as student learning that is designed to be collaborative, synchronous and/or asynchronous in the context of inquiry-based or problem-based learning designs, aligned to assessment tasks, including the co-creation of authentic learning products (addressing the need for enhanced *learner-learner* engagement).

The MEd(KN&DigInnov) has also been designed to enhance personal professional networks and personal learning conversations, understanding that learning is social within Communities of Practice where learning happens through experience and practice as part of a community (Lieberman & Mace, 2009). Each subject is treated as an intensive professional development program, facilitated by social interaction through forums, twitter, Adobe Connect, and other synchronous and asynchronous activities, helping to facilitate greater insight into generic issues (Rienties & Kinchin, 2014) through the various participatory learning experiences. A critical ‘game-changer’ in this initiative was the introduction of an ePortfolio approach embedded within the program design.

CSU Thinkspace for an ePortfolio approach

Both degree programs have embedded within each subject a reflective and reflexive journaling process undertaken at the CSU Thinkspace <http://thinkspace.csu.edu.au> platform, which was developed for the ePortfolio approach in response to the review. *Thinkspace* is hosted by Edublogs *Campus Press* and is a multisite installation of WordPress.

A reflective journal is used in each subject, and provides an opportunity for students to demonstrate functioning knowledge in the context of the intended learning outcomes for the subject or program. Students are regularly required to reflect upon their practices, link their reflections to theories and communicate in writing an understanding of the connection between the reflection and theory. This encourages each student to become a proactive learner and reflective educator who is “committed to continuous improvement in practice; assumes responsibility for his or her own learning; demonstrates awareness of self, others, and the surrounding context; develops the thinking skills for effective inquiry; and takes action that aligns with new understandings” (York-Barr, Sommers, Ghere, & Montie, 2006, p. 10).

Reflective thinking helps students develop a questioning attitude and new perspectives, identify areas for change and improvement, respond effectively to new challenges, and generalise and apply what they have learned from one situation to other situations (Turner, Reid, & Shahabudin, 2011). This experiential engagement is employed to foster creativity and initiative for new situations in connected environments for professional practice, and a capacity for confident personal autonomy and accountability in knowledge networking.

Approaches to assessment focus on participatory and digital experiences, in the context of program requirements, and include extensive use of formative 0% marks activities, recorded in the ePortfolio, as part of knowledge flow and peer-to-peer learning/engagement.

The ePortfolio allows students to use the space for personal reflection, as well as undertake assessments, responses to activities, or create artefacts and/or products as part of the learning experiences. In addition, one degree program that requires professional placement and workplace learning, ensures that the ePortfolio can integrate a full record of activities as required. Many students keep an open and public record of their learning, e.g. <http://thinkspace.csu.edu.au/hyacinth/> providing an easy (and open) way to see the range of digital learning/assessment experiences alongside a record of their participatory experiences and online interactions, in keeping with the global participatory nature of the program.

Implementation strategies

Students are introduced to the ePortfolio in the keystone subject, Following AQF guidelines to include keystone subjects and capstone experiences, the introduction of the ePortfolio commences in the first common core subject. By the introduction of the Thinkspace ePortfolio approach within the keystone subject, it then became possible to build a repository of knowledge and experiences, assessment items and reflection, concluding with a whole program review within the ePortfolio as part of the capstone experience. The capstone experience needs to draw upon the sound introduction of reflective journals in the keystone subject, with a continuation of this embedded in all the subjects. This allows for not only informal student writing, but also targeted assessments within the ePortfolio in some subjects, with all subjects including a reflection added as an element of the last assessment. Curriculum alignment has been essential to streamline the reflective journal approach, in order to nurture the learning experiences throughout the program.

Key implementation strategies included the following:

- The keystone subject needs to ensure that both teaching practice, module introductions and engagement with Thinkspace supports the introduction and subsequent development of reflective journaling;
- Marks are not allocated *during* a subject to blog or journal activities, but should focus on the final reflection. It is important to continually review how we teach with, provide instruction to, and support students in the subject experience in relation to reflective journaling;
- Reflective journaling is promoted as an opportunity for students to explore, ask questions, respond to readings, summarize key ideas, recognise strengths and weaknesses in their emerging professional understanding and practices; and
- Subjects model the 'capstone' process during each subject by allocating a small percentage mark to a final learning outcomes Reflective Post as a culmination of student engagement in the subject within the final assessment. This provides formative assessment alignment leading students to the last capstone subject.

Learning and teaching strategies that are recommended included the following:

- Learning about and engaging with the digital affordances of the ePortfolio platform models authentic professional experiences;
- While students are also engaging in other synchronous and asynchronous activities., students should not be asked to cut and paste blog posts and place them into a discussion forum, or vice versa. However, some students do like to share their ideas, and how they do this in relation to a blog post is up to them. Often this is done by beginning a forum post with "I have just written a post about..." providing a link and commenting on why that post has been important to their emerging understanding of the discipline.
- No marks are specifically allocated to Forum participation or specific blog posts during the subjects, because students should have freedom as professionals to engage without embarrassment or criticism.
- Introducing and managing quality reflective journal practices within this context requires discussion, explanation and modelling for students, particularly where they have no prior experience in this process. The subject modules should provide examples or links to practice in this area drawn from past students, course lecturers, and practitioners, for example
 - Doug Johnson, *The Blue Skunk Blog*, <http://doug-johnson.squarespace.com/>
 - Lyn Hay, *Student Learning Through School Libraries* <http://studentslearn.wordpress.com/>
 - Jenny Luca, *Lucept: Intercepting the Web* <http://jennyluca.com>
 - Judy O'Connell, *Heyjude, Learning in an Online World* <http://judyoconnell.com/>

Assessment activities in the ePortfolio

The Thinkspace ePortfolio approach allows a unique blend of open and participatory dialogue and formative learning outcome e-assessments. ePortfolios support reflective and purposeful knowledge construction, and self-directed learning.

Thinkspace ePortfolios provide:

- Both the discipline and the freedom of structure, allowing students to see and share their work;
- The opportunity to assess personal strengths and weaknesses through examination of a collection of examples and review of subject experiences;
- The opportunity to share build collaborative knowledge and understanding, and share assessment products;
- A framework and process of self-assessment that leads on to setting goals for future development and professional growth.

Through the Thinkspace platform students demonstrate an overall integration of engagement with reflective and reflexive practice which are supported by opportunities to:

- Build open access products together e.g. Game-based learning compendium <http://thinkspace.csu.edu.au/gblcompendium/>;
- Build curriculum rich digital artefacts e.g. Things that Matter <http://thinkspace.csu.edu.au/lisa/category/inf533/>;
- Build comprehensive capstone Program reflection e.g. <http://thinkspace.csu.edu.au/melissawaldronlamotte/2015/07/26/etl-507-final-reflective-portfolio/>;
- Build a record of professional study visits e.g. <http://thinkspace.csu.edu.au/susanne/2015/06/25/gold-coast-study-visit-2015/>
- Build a record of workplace activities e.g. <http://thinkspace.csu.edu.au/susanne/2015/02/25/library-placement-report/>; and,
- Build digital scholarship transactions e.g. <http://thinkspace.csu.edu.au/fromheretothere/2015/09/26/digital-scholarship-an-interpretive-discussion/>.

Students have utilised participatory and collaborative tools and approaches throughout the subjects, with many learning for the first time how to engage at this level. The participatory nature of the use of Thinkspace was neatly highlighted in the first year of the use of Thinkspace (and the new focus in the subjects) by the public sharing via Twitter hashtag #INF530 for a Keystone subject, with a bottom-up praxis emphasised by a willingness of students to post a link to their assessments, via their reflective blog — even before the assessment was marked! After the assessments were marked, regardless of the grade level achieved, even more students willingly shared their work. A highlight for students was when an assessment went ‘viral’, being picked up by some knowledgeable people and organisations. <http://thinkspace.csu.edu.au/hbailie/2014/06/04/going-viral/>

Conclusion

The design of degree program with an integrated ePortfolio approach transformed the program from a collection of subjects with a final professional experience portfolio requirement into a portfolio-enhanced learning program where students graduate with evidence of their personal and professional capabilities in their new discipline field. The use of Thinkspace, as an ePortfolio, is in its third year of implementation within the two programs that adopted and embedded the use of this tool. As a result of the experiences to-date, the use of Thinkspace will be continuing, after a comprehensive program review undertaken in the first half of 2016.

In addition, the use of Thinkspace for reflective practice and ePortfolio use has been expanding across the university and is now included in a number of other degree programs within the Faculty of Business and the Faculty of Arts and Education. There are also plans to introduce the tool for ePortfolio use in the Faculty of Science. Using a flexible and authentic tool (using WordPress) hosted by Campus Press has provided an authentic and reliable ePortfolio tool, that has allowed the digital affordances of such an environment to support multimodal approaches to reflective practice and digital participatory networked learning experiences. The digitally curated experiential ePortfolio approach using CSU Thinkspace promotes digital identity and digital scholarship as an important component of professional practice/s within the discipline. Thinkspace ePortfolios have provided a unique way to enter into the multiple layers of learning and teaching for intended learning outcomes, and also support reflection and reflective practice during and beyond a degree program.

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Biography

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Judy O'Connell is the Project Manager, Online Subject Enhancement in the Faculty of Education. Previously Judy was Courses Director in the School of Information Studies where she also engaged in leadership initiatives in online environments to further digital scholarship initiatives. Her professional leadership spans school and tertiary education, with a focus on libraries, learning spaces, online learning design, innovation, social media and technology for learning and teaching. She has also been a member of the NMC K-12 Horizon Report Advisory Board since 2009, and likes to stay in touch with emerging technologies, particularly in relation to learning experiences. Judy writes online at <http://judyoconnell.com>