ePortfolios In Australian Higher Education Arts:
Differences and Differentiations

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Abstract

This paper reports the findings of a project that investigated uses of electronic portfolios (ePortfolios) in the creative and performing arts at four Australian universities and raises four significant areas for discussion: engaging technologies as an ongoing requirement of planning, delivery and evaluation of teaching and learning in higher education; ePortfolios and their implications for curriculum planning; the influence of ePortfolios on learning, self-awareness and reflection; and differences in ePortfolio expectations and uses between the varying specializations of music study in higher education. Identifying marked differences between the four higher education institutions in this project and their applications of ePortfolio work, our discussion supports the hypothesis that ePortfolios cannot be applied generically

across the arts; rather the ePortfolio requires qualification in expectations, roles, applications and theorisations. The paper makes recommendations for higher arts educators and highlights some of the strategies that heighten the development of professional practice and related learning.

Introduction

ePortfolios are a pedagogic innovation through which students use authentic evidence to document their achievements and skills, and they are acknowledged as having multiple purposes and uses. Since their entry into educational practice in the early 1990s, the potential of ePortfolios to support and benefit learning and teaching has been increasingly recognized and understood (Jafari & Kaufman, 2006). Within a digital site, ePortfolios rely on students' problem solving, decision-making, reflection, organization, curation, and critical thinking skills. For educators they provide forms of teaching delivery, course management, personal development and assessment. Their use in specific subject areas at university level, particularly in health care studies (Garrett & Jackson, 2006) and teacher education (Sherry & Bartlett, 2005), are well documented.

The appeal of ePortfolios to the performing and creative arts discipline areas stems from the potential of multi-media digital technologies to present outcomes of students' artistic activities and outputs (Ramirez, 2011). However, studies of ePortfolios in the creative and performing arts have tended to be generic in their approach and have rarely investigated the multi-layered nature of relationships between the subject area and ePortfolio usage (Dunbar-Hall, Rowley, Bennett, Blom & Hitchcock, 2013). Similarly, while the extant research supports the benefits of ePortfolios, these benefits have rarely been integrated into teaching practices across the creative and performing arts in Australia. Finally, we note that there is little research investigating teaching staff and their practice and understanding of ePortfolios.

Drawing on the findings of a two-year project that involved ePortfolio use among music and creative and performing arts students at four Australian universities, this paper seeks to analyse the multi-layered relationships and the potential for broader uptake. Our research indicates that in the creative discipline areas a range of factors influences students' use of and opinions about ePortfolios. This signals the need for tailored approaches, which in turn require understanding of institutional policies and practices, the ways in which different student cohorts utilize and manage ePortfolios, and the relationships between subject-related forms of technology and students' responses to ePortfolio-based work. Our findings, therefore, emphasize that adoption of ePortfolios within creative and performing arts programs requires educators to understand how ePortfolios relate to the specific learning and learning outcomes of students in their discipline area.

Context

This project constituted a multiple case study in which educators at four institutions researched undergraduate ePortfolio use in different subject areas of the creative and performing arts (Dunbar-Hall, et al., 2013). At Curtin University, students in creative and professional writing and performance studies used an institution-specific platform called "iPortfolio" to aide with career planning and the development of professional identity, and to gauge the extent to which students were able to recognize and maximize opportunities for future employment. At Griffith University the research involved music technology students enrolled at the Queensland Conservatorium of Music, who selected their ePortfolio platforms from freely available open-source software.

Students enrolled at the Sydney Conservatorium of Music in composition, musicology, music studies, music/medicine, and performance used a commercial ePortfolio platform. One of the objectives of this case study was to compare uses of ePortfolios across these diverse areas of music study with those from a previous study involving only Music Education students (Rowley & Dunbar-Hall, 2012; Rowley, Dunbar-Hall, Bell & Taylor, 2012; Taylor, Dunbar-Hall & Rowley, 2012), and to ascertain how a student's degree program might influence ePortfolio use, attitude, content, visual appeal, relationship to learning, and technological skills. Students at Western Sydney University used the same commercial platform. In this case, one cohort of students (2nd year performance majors) constructed ePortfolio capstone objects based on their community music experiences and a second cohort (3rd year music students) engaged in collaborative essay writing around topics in music criticism (Blom, 2014).

We note that an Australian conservatorium is a higher education (tertiary) level institution, most often affiliated with a university. In other contexts these institutions might be known as conservatoires. The Sydney and Queensland conservatoriums are music-only institutions, while the other two institutions discussed in this paper deliver music and other creative and performing arts subjects integrated across whole university contexts.

The diverse nature of the institutions presented both challenges and opportunities. One challenge was the different number of students involved in various data collecting activities (see Table 1 below), where the highly specialized nature of study at the Sydney Conservatorium of Music influenced the small number of participating students whilst other institutions were able to engage whole classes and cohorts. Diversity also presented opportunities in that various aspects of ePortfolio implementation could be addressed in relation to the impact of policies at either faculty or university levels. These differences were not, therefore, seen as a disadvantage to the study; rather, diversity of context and implementation reflected the reality of ePortfolio use in the widest sense by reflecting

multiple institutional policies, subject offerings, expectations of ePortfolio application, staff input, and continually developing approaches to learning and teaching based on or supported by information technology (IT). As the use and differentiations of ePortfolios were written into the initial objectives of the research, the inconsistencies between the four partner institutions were integral to the project.

Approach and Theoretical Background

In total our study interacted with 335 students, as indicated at Table 1. In the case of Sydney Conservatorium of Music, comparative data was also available from 67 Music Education students who had participated in a previous ePortfolio project mentioned throughout this paper and these students are also included in the student count.

The research was qualitative and involved individual surveys and interviews together with focus group interviews to derive impressions of ePortfolio use. To ensure comparability across the institutions, the team adopted an initial set of open-ended question topics from which specific, institution-relevant questions could be tailored. These covered:

– student choices of ePortfolio content;
– reasons for content choice;
– perceived uses of ePortfolios during study and after graduation;
– problems encountered in ePortfolio-based work;
– relationship between ePortfolios and learning;
– aspects of ePortfolios directly related to students' chosen creative/performing arts specializations;
– relationships, if any, between ePortfolios and uses of social networking sites;
– technological aspects of making and disseminating an ePortfolio.

In line with institutional differences outlined above, each institution also employed research questions relevant to their own ePortfolio profile. For example, students at the Sydney Conservatorium of Music considered questions specific to the professional directions they might take after graduation. Most questions sought open-ended responses, resulting in a wide range of responses.

The study adopted a qualitative approach and was informed by the theoretical framework of possible selves (Markus & Nurius, 1986), a forward-oriented approach through which individuals can make sense of the present and begin to make predictions about the future. Where much identity research is focused on antecedents to present identity, or self-concept, possible selves is focused on the realisation or avoidance of possible future identities. As such, the theory can motivate people "to reduce the gap between their present and future

positive possible selves while increasing the gap between their present and future negative possible selves" (Lee & Oyserman, 2009, n. p). In line with possible selves research, the survey and focus group instruments incorporated both reflective and future-oriented questions alongside questions informed by extant research.

Once ethical approval had been secured at all participating universities, the team employed two main methodological processes to collect information: survey and semi-structured interviews. In line with action research the project was open-ended and self-reflexive, relying on the conversion of practice into action as a series of overlapping stages in which the findings of earlier stages influenced the directions, objectives and processes of subsequent stages. Following Denzin and Lincoln's (2000) common attributes of action research, the project design ensured "collaborative dialogue, participatory decision making, inclusive democratic deliberation, and the maximal participation and representation of all relevant parties [...] research subjects become co-participants and stakeholders in the process of inquiry" (p. 32). Research relied on and drew from relationships between researchers and researched not only to understand issues, but also to produce ways of addressing them.

Table 1

Student numbers by institution

Institution	Major study area/s	Students
Curtin University	Creative and professional writing; performance studies (theatre)	81
Queensland Conservatorium, Griffith University	Music technology	80
Sydney Conservatorium of Music, University of Sydney	Composition, musicology, music studies, performance, and music and medicine	123
Western Sydney University	Performance, composition and sound technology	51
Total		**335**

Students were invited to participate in the study as part of their degree programs, and data collection involved regular written reflections, surveys, recorded discussions and focus group discussions. Whilst most data collection was conducted in class, the submission of documentation for research purposes was entirely voluntary. Each survey included closed questions, open questions, and repeated items for the purpose of triangulation.

As mentioned earlier, each distinct cohort also responded to questions designed specifically for that cohort. For example, as 46 final-year writing students at Curtin University were enrolled in a final-year capstone unit, they answered questions relating to the use of an ePortfolio in seeking work and reflected on the process of ePortfolio development using guided reflections. There were 32 students at Western Sydney were similarly enrolled in a final-year capstone unit and completed a two-part questionnaire on these issues. In addition, there were 19 second-year music performance students at Western Sydney focused in the role of the ePortfolio platform in relation to collaborative work, peer evaluation, and possible uses of an ePortfolio within the undergraduate program.

A questionnaire completed by 36 music students at Sydney Conservatorium of Music sought information on student perceptions of ePortfolios, perceived relevance, challenges, sense of identity, achievements and outcomes, experiences and technological approaches. Also at Sydney Conservatorium of Music, 15 students attended an open-ended panel discussion of student views on portfolio use and another five students from across the Bachelor of Music program were interviewed. The researchers from all institutions completed observations and reflections throughout the project.

Responses were recorded and transcribed, then coded according to the original questions. Identification of new themes involved inductive coding conducted by two team members, after which coding was compared and refinements applied.

Findings and Discussion

For the purposes of this discussion we focus on the issues that emerged as significant in our understanding of ePortfolios in music and the creative and performing arts. This significance was demonstrated by the emergence of four common issues across all four institutions: technology; ePortfolios in relation to curriculum; ePortfolios and thinking; and disciplinary difference.

Technology

This project occurred during a period of unprecedented technological change that has altered the relationships between the arts, technology and education, and has shifted the sites and processes of arts work. As Brown (2012) has noted:

> opportunities and challenges for contemporary music making are shaped by a variety of forces, including [...] new technologies for music production and consumption, such as mobile computing devices and their apps [...] and the social impacts surrounding the changes that result in the repositioning of music as a

discipline, from the "arts and crafts" to the "creative industries" (Brown, 2012, p. 1).

Brown's (2012) 'social impacts' extend to the influences of digital social networking sites on students' interactions outside of educational contexts, and also to developments in digital infrastructure that have permeated students' lives.

Hemmi, Bayne and Land (2009) acknowledge that these influences have significant implications for the design, delivery and evaluation of teaching, and on the ways in which students learn. An example from the creative arts context is the introduction of Web 2.0 authoring technology, which has subtly moved the identity of a user of software from someone who responded to published programs through to authorship of digital material. This can be summed up as a shift from reactive users of computer software to proactive or creative users, as discussed by Gray et al. (2010): in the educational context, "staff and students together, and students independent of staff, are freer than ever before to use new Web authoring forms as they choose, to support learning and teaching" (p. 105).

ePortfolios, through their reliance on student choices, decision making, production of an individual's profile, and potential for contribution to identity construction, can be seen as an application of this line of thinking. Indeed, students commonly raised the idea that ePortfolio use can be viewed similarly to their use of social networking sites, and there was regular contextualization of ePortfolios alongside other forms of IT-assisted learning such as the learning management systems of universities; publicly available internet applications including Facebook, Linkedin, Twitter and YouTube; and generic forms of digital communication such as blogs, emails and websites. Some students saw ePortfolio creation as similar to making and maintaining a Facebook page, and others made the link between ePortfolios and making, using and disseminating PowerPoint presentations for seminars. In this case the similarity was found in actions such as uploading text documents, visual images, and sound and film files.

Students advocated the need for flexibility and connectivity between different forms of digital media (PDA, phablet, smartphone, tablet, etc.) so that a range of media could be used to produce, handle and upload ePortfolio components "seamlessly". In these ways, introduction of ePortfolios became, for some students, similar to their membership of a generation of students for whom such forms of technology are regular parts of their lives. As one student explained: "(we are part of the) younger generations, we've just sort of grown up surrounded by technology so it comes easier (to us)". An obvious implication of this discussion was the need for universities and educators to keep abreast of technological developments and integrate these into their teaching programs.

Advantages of ePortfolio use were ascribed to the expectation to become proficient in creating and using an ePortfolio. For one student, learning how to work on her ePortfolio was "a useful means of learning to get used to making recordings [...] putting them up on a website or ePortfolio, designing the way (you) want it to look". Another student agreed with this position: "it shows a willingness to learn and keep up with technology". Students who had taken advantage of the ability of ePortfolios to house MP3 or digital video files commented that these files were already on their hard drives and could be simply uploaded into the ePortfolio platform. These files were "regular ways" of presenting themselves. This ability to refer to ePortfolios as an accepted digital artefact with an educational viability illustrates that many students see ePortfolios as part of wider and increasingly developing educational and personal technoscapes. The research team as educators also saw these advantages in ePortfolios, especially in relation to the ease with which they could access students' filmed or recorded materials for assessment procedures, and their usefulness for collaborative work by students.

The project encountered negative comment on ePortfolios across a number of technological issues. In the institutions where a commercial platform had been adopted and its use mandated, both staff and students bemoaned the time needed to learn to use the platform. This was often contextualized against requirements to become proficient in a range of other software programs required for daily university existence (including for library use, research, learning management systems, administrative processes and presentations). The need for time to learn new platforms is well documented (Rowley & Dunbar-Hall, 2010) and had been recognized as a potential problem since the beginning of the project. Of interest, this was handled differently at each institution. At Curtin, students and educators received a professional development lab-based workshop. They also attended a class-based discussion on the applicability of ePortfolios to career development.

At Western Sydney there was no extra time set aside for training and so it had to be delivered within the subject classes. Conversely, students at Sydney Conservatorium of Music were able to access one-to-one training on ePortfolio construction, including the creation of artefacts such as sound files and video. At Queensland Conservatorium, students were enrolled in a music technology degree program and brought their IT expertise to the project; their technological needs differed from those of the other students and their training began from a more advanced position. One of the findings of the project, therefore, was that not only do potential ePortfolio users need technical training, but also that different types of training are required in order to meet institutional contexts and students' individual needs.

A criticism of the commercial platform used by two of the institutions was its poor navigability, data limits on uploaded materials, and overall poor visual appeal. We note that a

subsequent version of the platform alleviated many of these issues, but students across the project preferred free-use software and simple ePortfolio platforms to the more complex commercial ones. It is likely that the adoption of an institution-wide ePortfolio lay at the base of these concerns; whereas text-base artefacts work well for some disciplines, media-heavy disciplines such as music and design have more complex needs. The implication is that the institutional selection of an ePortfolio platform requires understanding of the needs of and expectations of that platform across multiple and diverse disciplines.

Another issue raised by the students was that constructing ePortfolios with multi-media elements requires detailed technological skill that many students and educators do not possess. As one student reflected, "the biggest issue I can see with it is technical difficulties [...] it's always very frustrating". Concerns about technical ability extended to the viewers of an ePortfolio, such as potential employers: "if you have an ePortfolio and someone wants to look at it and they want to hire you and they can't see it, they might just change their mind, and that would be very disappointing". As expected, the music technology students were able to concentrate on present and future uses of ePortfolios rather than on learning the skills to construct, edit and disseminate them; this greatly reduced the need for techno-centric instruction. As this student cohort had been required to select their platforms and had selected a variety of different ones, they engaged in discussions where they compared and contrasted the advantages of different platforms. Of interest, the self-selection appeared to add to students' sense of self-determination and initiative. This was something not always found in the institutions where choice of platform was not possible, suggesting that ownership of platform enhances determination and initiative.

ePortfolios in Relation to Curriculum

ePortfolios are an example of the technologizing of education in general (Palloff & Pratt, 2001; Smolin et al., 2007; Spector et al., 2010), and of music education specifically (Heller, 2011; Adileh, 2012; Waldron, 2013;). As we have noted, introducing ePortfolios into courses within degree programs requires an allocation of time and both staff and student training. Other issues relevant to curricular planning and implementation include integration of assessment, different ways of designing curriculum, thinking about learning styles, teaching strategies, and providing rationales for ePortfolio use. Embedding ePortfolios into degree programs is a form of curriculum design and adapting existing assessment and assignments into ePortfolio tasks demonstrates ways in which the inclusion of ePortfolio work leads to changes in learning and teaching practices. However, these strategies are not sufficient unless they are both informed and supported. Students across all four institutions noted these issues with comments such as, "it is a great location to access all submitted assessments", "I much prefer electronic submission of assessments to hard copy", and that "(it) could help organise work".

The issue of justification or rationales for ePortfolio use was raised across all four institutions, emphasising that what educators see as relevant to meeting course objectives might not be seen in the same way by students. At Curtin University the research demonstrated the need to integrate ePortfolios as an assessable study component. Indeed, the first two student cohorts (not otherwise reported in this paper) were not required to engage, and despite showing considerable interest they did not take the first step of creating an ePortfolio. As one of the students explained, "if it's not assessed, then (students) don't have time or energy [...] because there's so many things that they're juggling".

Once the ePortfolio was positioned as a required task, students accepted the ePortfolio as conceptually relevant and completed the tasks required for their construction and submission. The "hurdle", then, can be the act of initial engagement; in the Curtin study, once students had engaged they became motivated to develop their ePortfolios in far greater depth than was required. This project represented the first use of ePortfolios in the subject areas, and the feedback from students led to earlier introduction as part of whole-of-degree plans that will develop what is increasingly referred to as "ePortfolio thinking" through engagement with information and materials (Feng, 2006; Stanford University, 2012). The research findings across all four sites suggest that the introduction of ePortfolios has the potential to change curriculum design and implementation in various ways, and that these should be acknowledged.

Students at Western Sydney struggled to see how an ePortfolio could be useful to a graduate, noting that they needed "clearer guidelines from the teacher". While possible future uses of ePortfolios could be glimpsed, negative technological experiences were counter-productive to this emerging interest; poor user experiences nullified any potential future advantages. Similarly, At Queensland Conservatorium more detail relating to relevance, use and applicability of ePortfolios would have helped students to justify the time required to create them. Responses from students at Sydney Conservatorium of Music gave the same impression: that while potential uses of ePortfolios could be identified, an overall rationale for their introduction into students' studies was needed. Having successfully incorporated ePortfolios with the third cohort of students, researchers at Curtin noted that successful student engagement was achieved by two means: mandating that students engage at a very basic level; and positioning the ePortfolios as relevant, practical and timely career development tools.

Another element of curriculum arose from student comments about the longitudinal potential of ePortfolios; how an ePortfolio might be used to collect and demonstrate student learning across a complete degree program. In relation to this, students noted that an ePortfolio could be used "to update particular courses you've completed [...] as you go along". Other

comments were that an ePortfolio could be "an online repository for my own use," "to keep track of all your compositions", "somewhere to 'compare new work against older work,'" or "an effective way of checking your progress". This sense of an ePortfolio as a representation of work across a degree program was used by one student as a recommendation for ePortfolio implementation: "to be honest [...] if it's going to be a meaningful tool, it needs to be something that's taken the whole way through (a degree)". A fellow student agreed: "I agree [...] it might be better to get it into that first year unit". This last comment indicates the need to introduce ePortfolio work as early as possible in a degree program. Moreover it suggests that students who build an ePortfolio over time begin to assess their own progress by reviewing earlier work and building the specific types of artefact that they feel necessary for career success.

ePortfolios and Thinking

Research in this project was often directed to issues of how working with ePortfolios influenced students' thinking across a range of issues, and specifically about themselves as learners and future professionals. At Queensland Conservatorium, students' reactions to ePortfolios presented as three portfolio attitudes, and further analysis indicated that students' ePortfolio work was defined by their individual attitude. Further analysis identified the three attitudes to ePortfolios across all four institutions, suggesting that students adopt one of three critical attitudes to ePortfolio work:

> **1. Foreclosed**
> Students who do not see ePortfolios as relevant to self or career. Minimum engagement even when engagement is mandated, and unlikely to accomplish more than required within mandated tasks.
>
> **2. Fearful**
> Students who are intimidated by having to work on an ePortfolio. Reluctant to engage and unsure how to define themselves within the ePortfolio; however, likely to become engaged once the initial steps are taken.
>
> **3. Inquisitive**
> Students who are excited or inquisitive about the possibility of creating a professionally oriented ePortfolio. Engaged in the process from the outset.

Over time, student responses to the research questions illustrated a progression beyond a simple sense of self-awareness to a better understanding of the relationships between ePortfolio and development of self and career. Students who engaged in self-reflection used their growing awareness to critically evaluate their own thinking and better understand their

progression, goals and achievements. In these cases the sense of self-efficacy was heightened by the process of reflection, resulting in a sense of resilience in the face of obstacles such as self-doubt. The start of this process was evident in student comments:

> as I was creating my ePortfolio, I had to look back and reflect [...] it also got me thinking about where I was going and what I wanted my ePortfolio to look like [...] this led to what direction I want to take in the program.

Many students reported a desire to control their own learning when it came to reflecting on how well ePortfolio technologies had assisted the development of their understanding. Students' reflections centred on technology use and how, as digital natives, they are not as technologically savvy and confident as is often assumed. What came through strongly in students' comments was the realisation that reflective practice can situate learning in relation to future lives and learning, and steer students away from what they consider to be technology constraints (Brooks & Rowley, 2013).

Issues of self-efficacy also arose from research at Curtin University, where ePortfolios were considered as a means of exploring possible future selves within and beyond the professional arts world. As part of this, there was evidence that students saw ePortfolio work as capable of furthering their networking abilities, having benefits in relation to career planning, and fostering self-awareness. Students also indicated that the project had prompted them to think more critically and reflectively about their future lives and careers and about themselves analytically, as the following writing student comments show:

> I think the most useful thing is that an ePortfolio is about showcasing yourself [...] it's a way of getting yourself to stand out, because it's who you are [...] the best thing is it really makes you think about what you want to do at the end of your degree [...] your strengths and weaknesses and what sort of positions you want.

> creating an ePortfolio helps with even just understanding about yourself [...] I think that the portfolio facilitates [...] the kind of revelations that you fit into certain boxes, that you can fulfil certain criteria, you are a certain type of person or you have a certain set of skills.

Similarly, many students at Sydney Conservatorium of Music commented that using an ePortfolio had led them to think about themselves and their studies in new ways. Comments such as "(it) forces you to rethink [...] what was relevant, what was useful in what I learnt", "(it) can force you to reflect", "(I used it to) reflect on how I'm performing currently", and "I

had to think about how to organise an ePortfolio", all relate to this aspect of their use.

At Western Sydney, students were asked how ePortfolios could enhance learning and career advancement. Problems with the technological parameters of ePortfolio construction and use influenced many students, leading them to comment negatively on these issues of ePortfolios and students' future directions. From this it was seen that poor technological experiences lower students' perceptions of the benefits of a technologically based medium for demonstration of learning through a personal profile. Students who were able to better manage the technology agreed that ePortfolios had provided a valuable means of communication between fellow students, and had benefited their studies through ease of access to collaboration, thus that ePortfolios fostered ways of thinking about and positioning themselves among their peers.

Both Curtin University and Queensland Conservatorium focused on ePortfolios as representations of the future. At Curtin University this was achieved through focusing on potential uses of ePortfolio in the transition from student to professional. Students at Queensland Conservatorium indicated that working with ePortfolios had led to changes in how students thought about themselves, their identities, and their futures: for example,

> – The most positive thing for me was the fact that I had now started to shape my portfolio for the future and it's also a great way to assess how far I've come between updates;
> – The ePortfolio has made me reflect and think forward towards future prospects;
> – I felt as if I was creating another avenue for my future.

Students also indicated that ePortfolio work had encouraged development of self-reflection:

> – It has encouraged me to look back at what I have done and think about how I want to portray myself;
> – The ePortfolio is less about how a certain result was arrived at [...] and more about showing a progression of musicality and maturity;
> – [The] ePortfolio helped me in identifying which aspects of my musicianship are particularly strong and weak; and
> – I felt as if I was creating another avenue for my future – establishing a compact ePortfolio solidified the fact that I no longer just call myself a performer / composer [...] I now represent something more! A much more cultured, open-minded musician.

As can be seen, these students were open to an array of possibilities by being able to generalise skill sets and to perceive alternative opportunities that might differ from their ideal job or career.

The research reported here suggests that ePortfolio work blurs the tensions between artistic/professional identities and learner identities. ePortfolios for creative arts students act as a connector for making shifts in thinking from student to self-directed, autonomous arts professional in a rapidly changing professional landscape. This is particularly pertinent in discussions relating to technology. The arts and technology intersect so quickly that there is no single "profession"; rather, graduates encounter diverse and often disparate opportunities. This continually emerging professional and artistic field requires adaptability, skills of projecting the self into previously unknown settings. Understanding of personal development and career directions is enabled as a result of implementing and assessing learning in a reflexive way, having engaged in longitudinal thinking through persistent ePortfolio work. As one student wrote, "it has made me think [...] helped me define who I believe I am and what I believe in".

Students reported that they manipulate their learning artefacts to demonstrate achievement in different content areas and to develop skills for other arenas, such as work readiness and identity development. The researchers found that the student immersion in the creative process and reflective practice of constructing an ePortfolio produced a strong 'sense of self' with regard to their future possible self. The model below provides a snapshot of the relationships between the various components of ePortfolio construction and identity development.
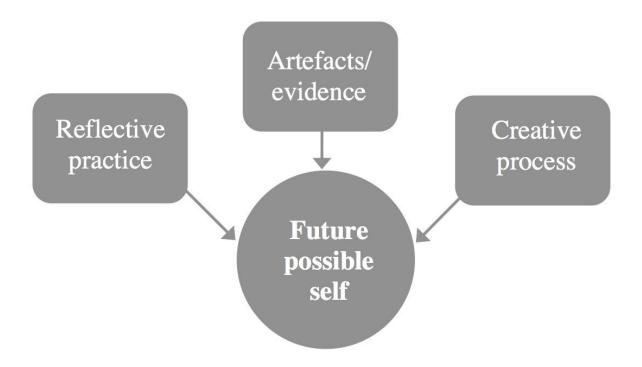
Figure 1. ePortfolio construction and identity development

Disciplinary Difference

Institutional and subject-specific differences within the four institutions enabled the project to assess the varying uses of and opinions about ePortfolios within the similar subject areas, especially among students in different areas of music study. One of the main findings at Sydney Conservatorium of Music related to this, and this was made possible by involving students in Composition, Musicology and Performance, and being able to compare their ideas about ePortfolios with those from a previous Music Education project. This comparison clearly indicated differences between various music specialisations. In uses, while there was general agreement that an ePortfolio could be used "like a CV" in job applications, Performance students also considered it a way to apply for post-graduate study, and for applying for scholarships/fellowships through which they could continue their performance studies. Some Performance students saw an ePortfolio as a way to promote instrumental teaching and, therefore, supporting themselves financially. Emblematic of this aspect of ePortfolio use was the indication of one student that an ePortfolio for furthering her performance studies and career as an instrumental soloist would be markedly different from one for attracting students for one-to-one teaching. The two ePortfolios would have different contents, different information, and different 'looks' depending on to whom she wanted them to appeal.

Other differences noted between students across a range of music degree specialisations at these institutions were that in Music Education contexts an ePortfolio was a way to demonstrate abilities in teaching to address official requirements of government controlled teacher accreditation, while for non-Music Education students, ePortfolios were more aligned to possibilities of showing personal, musical potential and creativity in Composition, Performance and Musicology. A major finding at this institution related to staff: in areas where staff were adept IT users, where forms of technology were regularly in use in lectures, where staff could be seen to be technologically savvy, and where there was a culture of IT-based teaching, and by implication, learning, students were more inclined to think positively about IT in their studies, and to be more receptive of ePortfolios. Thus, students in Composition and Music Education, both subject departments with high IT expectations and practices, strong modelling of IT by staff, and mandatory subjects in music technology in their degree programs, were more accepting of and interpretative of ePortfolios than students in Musicology, where these factors could not be identified by students. Potential uses of ePortfolios and beliefs in their efficacy, therefore, could be linked to how students saw IT-assisted teaching taking place around them as a form of validation.

Conclusions and Recommendations for Future Research

Our project, intentionally diverse in its contexts and applications, confirmed uses of ePortfolios for many purposes in teaching and learning in music and other creative and performing arts. Many of these uses replicate the viabilities of ePortfolios as found across other subject areas: ePortfolios for submission and assessment of students' work; to encourage collaborative peer interaction; for self-promotion in professional settings; for accreditation; for archiving and curation of learning; for longitudinal representation of the outcomes of an academic program; as an influence on curriculum; as a vehicle for encouraging self-realisation and reflection; and for requiring continual updating of staff and student skills in working through forms of digital technology.

In the same way, problems identified through this project recur in other subject areas: time constraints; the need to justify ePortfolio use; necessity of training; clarification of institutional policy, especially in the area of decisions about the platform/s chosen, and mandated; and expectations of levels of IT based teaching and learning for staff. In fact, we found that academic staff awareness of ePortfolios and their use in enhancing students' learning was minimal. In fact, training for staff has been identified as a priority by staff members we interviewed in an earlier project (Rowley & Dunbar-Hall, 2010). Many staff members are unaware of the advantages of ePortfolios – and of how to integrate them into teaching.

Our comparison of findings from four institutions highlighted the four issues discussed below,

perhaps indicating that these are major in understanding uses of ePortfolios in music and other creative and performing arts. In a technologically driven area, it was not surprising that responses to ePortfolio use often focused on technological issues, both advantages of this form of IT, and problems arising from it.

One issue that became clear was that for students, ePortfolios were considered one form of technology among the many that occur in daily life. Not only were some processes of use the same (e.g. filming, editing and uploading a video clip), but also if technology were in place through connectivity between devices, by implication the different component areas of students' lives could be linked. In effect, students' lives outside learning institutions could be brought closer to those inside them.

The second issue that this project emphasised was the role of ePortfolios in curriculum, as an example of the ongoing technologizing of education in general, and specifically in its discipline areas of music and other creative and performing arts. The need to scaffold ePortfolio work, to integrate it into existing subject areas, and to explain it to students were all raised across the four institutions in this project. Students felt that the diverse possibilities of ePortfolios allowed for a variety of different artefacts, information and examples to be included to show evidence of their abilities as musicians, educators and creative writers. There was a lack of understanding of the potential of ePortfolios, however, and also of their digital logistics (by which we mean how they interface with a University's Learning Management Systems, blogs, other websites, etc.).

The third issue, ePortfolios in relation to thinking, covered a range of topics: how reactions to ePortfolio use could be used to categorise students according to how they thought of themselves as users of this technology; ePortfolios to assist development of self-awareness and self-efficacy; development of thinking about current studies in relation to future career directions; individuals' positions among their peers; and shifts in thinking about learner and artistic identities.

Among students in the various types of degree programs in music as a university subject, there were differences in opinions about and uses of ePortfolios. Students in areas where IT was explicitly and continually demonstrated by staff were more inclined to be accepting of ePortfolios than those where IT-assisted teaching was a rarity. The differing study programs and potential uses of ePortfolios in future professional settings influenced many aspects of ePortfolios for these music students. These differences included in content, in dissemination, in the 'look' of an ePortfolio, and perceptions of potential audiences.

Although our project intentionally utilised difference, it showed the viability of ePortfolios in

its subject areas in music and other creative and performing arts. That the four institutions in this project applied ePortfolios differently validates our position that use of them need not be generic, and that there is a range of uses, applications, perceptions and theorizing about them, depending on a number of parameters. It was a conclusion of this collaborative data collection that there are different levels of uses and expectations of ePortfolios across the Australian university sector. Specialisation within subject areas, especially in music, whether Composition, Performance, Musicology, Music Education, or Music Technology produced differences in how ePortfolios were produced and would be used, demonstrating both general acceptance of their relevance, and their ability to influence and enhance teaching and learning.

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