Standing on the shoulders of giants: learning and researching value as a community of practice

International Coalition of ePortfolio Research Cohort VII
2013 - 2015

Kathryn Coleman, Sophie McKenzie, Cai Wilkinson

Deakin University, Melbourne Australia
Abstract

The Deakin University contribution to the Inter/National Coalition of ePortfolio Research (INCEPR) has been based on its underpinning curriculum model and assurance of learning through course learning outcomes. Our focus has been on increasing the value of eportfolio for learners through critically engaging with the ‘so what’ factor and how to better prepare students for this social and high impact educational practice (Kuh, 2008) of experiential learning and portfolio pedagogy. This has included developing structures to scaffold and support learners to articulate their skills, experiences and knowledge through evidence and reflections as they connect the dots and construct a learning narrative to make claims for employability through the construction and curation of a learner and professional identity. Through practice led and evidence based qualitative and quantitative research, we have evaluated how the act of curation, multimodal narrative and reflection contribute to developing this meta cognitive practice for learners. This snapshot will present how we are using ePortfolio for assuring learning outcomes, career development learning and preparing learners for a rapidly changing future in the new knowledge economy. This presentation will include examples of integrative learning and portfolio assessment, iterative learning design and the importance of a discipline specific language of portfolio for both learners and educators.

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Introduction

The emergence of digital environments to support portfolios allows not only the aggregation of artefacts in a wide range of formats, but also the embedding of reflection through self-review, peer assessment and sharing via social networks. While the potential of Portfolios at Deakin University, Melbourne Australia has been recognised for some time, logistical obstacles to uptake beyond a unit of study has resulted in little research into the value of the portfolio to student learning holistically across, for example, a Course. In this context, a Course is a programme of study leading to a degree and is made up of a number units, normally 24 in a 3-year undergraduate degree. Portfolios in the learning management platform, alongside Course Enhancement, have provided an opportunity to investigate the perceived value (the relative worth and importance) in different disciplines. This report includes discussion on our findings; our design based iterative experience in reading and categorising artefacts, evidence and reflections; and two specific case studies focusing on how pedagogy has informed our experience in the Inter/national Coalition of ePortfolio Research (INCEPR).

Deakin is a multi campus University in Melbourne, Australia and uses the Desire2Learn Portfolio, BrightSpace. The template of the Learning Management Space (LMS) is customised to suit the needs of the Deakin community and is called CloudDeakin (see Figure 1). A small number of courses have been using ePortfolios, typically at the unit level. Through the Course Enhancement Process in which key employability skills (Graduate Learning Outcomes) are integrated within courses as Course Learning Outcomes (see O’Brien & Oliver, 2013), a growing number of courses have begun to adopt ePortfolios across the course for evidencing learning. We decided to investigate the value of ePortfolios to first year students in a course that had introduced them across the whole course for the first time in 2013, the Bachelor of Information Technology (IT) and the Bachelor of Nursing were selected.

![Figure 1: Screen shot of Kate Coleman’s CloudDeakin Portfolio Dashboard](image)

This report presents the courses that have been integral to the Deakin INCEPR community of practice. Firstly, the Bachelor of Information Technology (B.IT) and Bachelor of Nursing, where the ePortfolio is used in all units in first year, for both formative and summative assessment since 2013. A small pilot research
study was conducted at this time to explore the value of ePortfolio to the student cohort. Secondly, this report focuses on the Bachelor of International Studies, where the ePortfolio is used as a capstone tool for evidencing course outcomes.

Since 2014 the Portfolio tool has been moved to feature more highly on the CloudDeakin template for students and highlights Deakin’s commitment to portfolio thinking and integrative learning (Huber & Hutchings, 2004; Peet et al. 2011). More courses are exploring the use of ePortfolio to assist in building student outcomes. Deakin’s ongoing cultural change through learning and teaching and a focus on evidence in assessment for learning has provided impetus for portfolio pedagogies to be further explored.

This shift in thinking at Deakin has allowed us as educators to explore the very nature of digital learning evidence and evidence of learning. As we have explored through our INCEPR homework over the years, the potential of portfolios at Deakin has been recognised for some time. We have an inbuilt portfolio tool in our current learning management system and there are many cases of course wide approaches to portfolio learning, assessment and graduate employability.

Our initial INCEPR question focused our attention on the value of the portfolio to student learning across a Course or a collection of units that supported a ‘folio thinking’ paradigm.

The findings of this small pilot study to investigate the initial research question based on ‘value of ePortfolios’ included a low response rate across both courses (n=17 and n=14 respectively), limiting the generalizability of results. The first on-line survey was responded to by students enrolled in the first year of the Bachelor of IT consisting of 19 questions (12 fixed response and 7 open-ended) developed in consultation with ePortfolio at Deakin (eP@D), a group of learning and teaching specialists from faculties and service units. Question 3 of the fixed response questions was modified from the RMIT ePortfolios: Assessing the Student Experience Survey (Botterill, 2009). Students were given a short in-class presentation about the study by one of the researchers to invite participation. Following this, the survey was circulated via email to the students in week 3 of first trimester, with two follow-up reminders sent by mid-trimester.

As a pilot study, the qualitative results did reveal some cautionary messages that needed to be heeded. The results from this study clearly demonstrated that the majority of survey respondents did not understand the value of ePortfolios, either immediate value in learning, nor as a tool for developing a professional identity or in future employment. Many did not believe the ePortfolio helped them demonstrate capabilities developed in their unit or course. These results suggested a lack of communication in relation to the value of ePortfolios at Deakin. The result may be a dislike of ePortfolios which may be seen as a hurdle rather than supportive and advantageous to the student. As one student said:

‘I do not like ePortfolio, I do not like it Sam-I-am’ (student quote).

Responses to What has been communicated to you in your Unit/Course about the VALUE of ePortfolios to you? Please provide an example if possible in the B.Nursing included:

‘Good for a resume type of thing so future employers have evidence of skills’
‘I have been told that it is a good place to store completed work. But have found it unnecessary as i can organise my own work effectively without the use of an ePortfolio’
‘It is helps us as a way to collect data that can help when we are applying for a job’
‘Can be used for jobs.. but unsure how this applies in reality’
There were also student responses that indicated that capacity building in folio thinking and ‘teaching’ of the portfolio platform needed to be further developed to support portfolio pedagogy and technology use:

‘I feel the CloudDeakin eportfolio is clumsy and difficult to manipulate into showing what you really want to show, being restricted to artefacts, presentations etc. There needs to be more freedom with how go about adding to it and filing it into particular order. My paper-based portfolio is much easier to create and access and also looks better than the eportfolio’.

The study completed two rounds of collection through ethics approved surveys completed in year 1 Bachelor of Nursing and Bachelor of Information Technology in 2013. The study received ethics approval from the Human Research Ethics Committee of the Faculty of Science, Engineering and Built Environment and Faculty of Health.

In the B.I.T responses to Are ePortfolios of immediate value to you? (for instance, in your thinking; in your learning; in your work; in your productivity), 11/14 respondents stated that ePortfolios were not of immediate value. The following quotes exemplify the different opinions:

- ‘Yes, it helps me to show my ideas in a more creative way’
- ‘Not really. Any reflecting I do can easily be taken from other sources; like simply writing in a diary. I don’t need any specific program or medium to reflect on past work’.
- ‘No, they are just an extra step for submitting some assignments’

Do you value your ePortfolio as a tool for growing/developing your professional identity? Please explain. 8/14 respondents stated they did not value their ePortfolio for this purpose, 2 answered ‘possibly’ and 3 answered in the affirmative. The following quotes demonstrate different reasons given:

- ‘Yes. It allows me to store evidence of my skills to showcase for future employment’
- ‘Yes, I can refer back to previous work and expand on it’
- ‘I’m still very early on in using the EPortfolio but I can see the possible growth in my work in all aspects if I start to use it more frequently’
- ‘No, it’s nothing but an inconvenience’
- ‘No I don’t, as I don’t get how an ePortfolio is relevant to our employers or if it even exists to their knowledge. Sometimes it can be too much information and pieces to go through, which can be very time consuming and would be better utilized in a summarized resume’
- ‘No, I find it unnecessary. University helps develop professional identity already, ePortfolio isn’t really bringing anything new to the table’

This was a small pilot study to investigate the value of ePortfolios in the Bachelor of IT students as Deakin courses seek to explore and implement ePortfolios to evidence learning. However, we decided as a team of educators and researchers that re-focusing the question was important to establishing a better culture of portfolio learning and support our students in the needs they addressed in their survey responses. The results suggested a lack of student understanding of the pedagogy and the technology needs, including a perceived value of ePortfolios within and beyond the course. We all agreed that the importance of communication and fostering of student ‘buy-in’ of the use of ePortfolios was paramount (Penny Light et al. 2012). Dr Helen Chen, Associate Professor Tracy Penny Light and Nancy Wozniak when visiting Deakin in 2014 for Professor Beverley Oliver’s Teaching Fellowship ‘Assurance of Graduate Capabilities’ suggested several strategies to frame ePortfolios for students, essentially providing a rationale for adoption of
ePortfolios by students and encouraging buy-in. Over the years there has been a significant change in the focus of learning, teaching and assessment evidence as a result of Deakin’s strategic goals. ‘The Deakin Promise in Learning, through LIVE the future, is to offer brilliant education where the students are and where they want to go’ (Oliver, 2014).

Through the Course Enhancement Process in which key employability skills (Graduate Learning Outcomes) are integrated within courses as Course Learning Outcomes (O’Brien & Oliver, 2013), a growing number of courses have begun to adopt ePortfolios across the course for evidencing learning. This evidence of learning approach allowed the portfolio to demonstrate its value as a pedagogical tool to support institutional change for learning-centred approaches.

At Deakin we now have an aligned curriculum and benchmarks across the institution in every course. We have not had this opportunity before - through mapping the standards, making the teaching and learning explicit to the whole course and key stakeholders we have highlighted consistency across courses. Alignment to the Deakin Graduate Learning Outcomes now makes the portfolio more valuable, relevant and possible to use to demonstrate the aligned curriculum. Our previous context was a more unit focused approach to learning and teaching; the Course Enhancement approach has introduced a course approach, that is more of an explicit learning pathway and learning model for graduate capabilities and graduate employability.

**Course Enhancement:** A course approach to curriculum renewal requires collaborative criticality of the course learning outcomes. A course team view of learning outcomes presents particular opportunities to review how students enact course learning outcomes through assessment. Additionally, a course teaching team invites a critical gaze on the quality and capacity of assessment design to provide evidence of course learning outcomes, as the first point of reference for curriculum review. Importantly, course teams in higher education settings vary considerably in collaborative experiences of course renewal (Benjamin, 2000, Pegg, 2013, Savage & Pollard, 2014) and this may have some bearing on the extent of engagement with portfolios from a course perspective.

This process included developing course coherence through course scoping and course (re)design:

**Course Scoping:** The Course is scoped through a number of lenses, including an external review and course and unit evaluation. The Course needs are identified (school, faculty, professional accrediting bodies), mapping needs are further explored (i.e., AQF requirements, research needs etc.), new learning outcomes are developed in alignment with Deakin Graduate Learning outcomes, professional standards (if any) and discipline threshold learning outcomes are investigated to develop a set of minimum standards to evidence learning.

**Course Design:** The course is explored using a collaborative approach to further extend the LIVE agenda at Deakin and to develop a coherent course team. Work is developed in both cloud and located learning, teaching and assessment; instructional design through the alignment of assessment in each unit, and resourcing the units and course.

**Implementation:** support was provided to each course to focus on evidencing the graduate learning outcomes in each unit of study through enhanced cloud and located strategies.
Course enhancement at Deakin is led by the Faculties and ensures every course has a clear and concise set of course learning outcomes and minimum standards aligned with Deakin Graduate Learning Outcomes, professional accreditation requirements (where applicable) and the Australian Qualifications Framework.

1. The Research question

Why portfolios at Deakin? What does a portfolio look like at Deakin?

Informed by the INCEPR propositions and community of practice through meeting and research tasks assessment, reflection, we have explored the and value of portfolios in our context. Through participation in the coalition, we have questioned our beliefs and principles and now, standing on the shoulders of giants, shifted and re-positioned our emerging practice and developed a new thread of research woven through a whole of course approach where metacognition, personalised learning (Batson, 2015) and portfolio pedagogy were a good fit. Identifying the meaning of portfolio at Deakin created an experiential and problem based learning opportunity. It created a space for our team to re-imagine the thinking and purpose of portfolio and consider ways to shape and support it as a pedagogy rather than a plug in technology. The research and re-focus included continuing to focus on the learning design and evidence in one course in particular. Students portfolios in the Bachelor of Information Technology course were being followed throughout the cohort cycle. In addition, the Bachelor of International Studies (B.IS) was added as a case study, since the adoption of portfolios was being actively explored by the Course Director as part of ongoing development of the course.

Portfolios at Deakin have been enriched by the varied and differing approaches, implementations, platforms, findings and sharing we have learnt about from the cohort as well as our knowledge growth through portfolio reading, artefact and reflection analysis and varied pedagogical approaches. Through participation in the INCEPR cohort the nature of portfolios at Deakin has been explored in a range of courses and included as many stakeholders as possible in this journey. What is core to portfolios at Deakin is focusing on folio thinking and habits of mind to create a culture where students can evidence learning for employability, develop and evidence the graduate learning outcomes and demonstrate through curation of artefacts the disciplinary course learning outcomes.

Through the re-design of assessment and evaluation at Deakin as well as the cohort membership of INCEPR, we have witnessed an ongoing shift in our thinking and iterative design process to highlight and focus on portfolio context, language, lenses and tools (technology solutions and approaches).

We would not have seen the shift so clearly if it had not been for the ongoing coalition meetings and subsequent sharing of practice within our team at Deakin and those in the cohort. One aspect that was made clear in the cohort meetings was that of difference; we found very different approaches to portfolios in higher education in Australia and North America. We have found a gap in the literature, research and practice of portfolios in our continued involvement at this international level and seek to continue in this research space as a result of this study. In the cohort meetings, one thing was evident for all involved, we were using the same words to define and describe practices related to portfolio through different lenses. These lenses include higher education structural differences, disciplinary difference in language and context as well as differing needs and purposes for portfolio. We are keen to explore these differences to contribute to the growing field of portfolio practice research and support our Australian colleagues as they approach the vast amount of portfolio literature that is North American centric.
Lenses of learning that have become obvious include:

- **Reflection:** The way we view reflection with a small r or a big R has many disciplinary-specific contextual differences that shift the language and style. When we teach reflection and/or Reflection we are also using different disciplinary models and need to be aware of this and make this explicit in our teaching and research outcomes.

- **Evidence:** We view evidence through a range of lenses and perspectives depending on the range of contexts, from evidence of learning, evidence of a skill, experience or as a whole of course. We use the word to have many meanings and connotations when we talk about portfolios. A curated portfolio of evidence, or a portfolio that contains artefact as evidence, or a curated portfolio that uses evidence to support claims through reflection.

- **Materiality:** This lens is disciplinary. An artist or designer discusses material practice and materiality to present their intent through the media. This does have implications for the way we use it in portfolios, we could be referring to the multi-modal media explored throughout the portfolio composition, the actual composition as a whole, or the way materials are used to lead the viewer from one artefact to another and the impact or impression that one had one another. For instance, how the use of the I Am statement language impacts on the way we view the photograph to the way we now read the page structure. The materiality can shape our lenses as viewers.

- **Standards:** We view standards in each of our educational contexts, nationally and internationally through a range of lenses. We use standards to define achievement and evidence of learning outcomes, have our own standards as teachers and educators and have standards that we must adhere to our in our institutions that get confused when we talk about them in relation to portfolios.

These points of difference are located within disciplinary lenses of learning, language and cultural semantics as well as the institutional context. At a team meeting in February, 2014 we decided to re-focus the Question to include highlighting these differences found in the literature and emerging practice of international portfolios to highlight:

**What is core to Portfolio at Deakin University, Australia?**

The research question has been refined as a result of the course enhancement process and reflection by the team on lessons learned. The lessons learned include; recognition of the importance of communication and the need to foster student ‘buy-in’ with ePortfolios (Penny Light et al. 2012) and the need to engage with all stakeholders. Engaging students in the process was slow however. In consultation with Penny Light and colleagues (2012) it was suggested that a rationale for adoption of ePortfolios by students was paramount. Rationales include the argument that ePortfolios could be of interest to employers trying to choose between a shortlist of applicants; that an ePortfolio is a product that could be shown to prospective employers as well as a process for understanding and gaining practice articulating and reflecting on their achievements and may be useful in a job interview; that accrediting bodies are beginning to require authentic evidence of generic skills and that ePortfolios allow an opportunity to share informal extracurricular experiences that are significant (Penny Light et al. 2012). This folio thinking paradigm had to include buy in by educators across the institution as well as learning and teaching support staff. This has taken time, key to our research question was ‘core’, this enabled us to focus our attention on the needs of all stakeholders and learn from the participants responses in the survey on value.

Careers educators, as well as Language and Learning advisors contributed to the thinking around the use of ePortfolios at Deakin. The key motivators include the need to encourage and enable students to gain employment; to become proactive in gaining experiences that develop skills and employability, to collect and
record these experiences, to reflect on how they contribute to self-management and a growing professional identity and to be able to articulate readiness for employment. It is anticipated that with participation in the portfolio processes the student would have an increased sense of professionalism with an effective resume, supported by evidence of achievement of course and Deakin Graduate Learning Outcomes and readiness for interview. This last capability is still an area that careers advisors and employers identify as needing improvement. The portfolio presents an opportunity to communicate to students the importance of collating the evidence of their learning. In particular it helps to make clear, when reflection is required as an integral part of the process of keeping an eportfolio, the relationship between the various activities and experiences students undertake both at university and beyond and the employability skills they need to develop to become career ready.

**What does a portfolio look like at Deakin?**

Deakin University is working within a standards-based assessment framework (Boud, & Falchikov, 2007) and constructively aligned curricula, to better ensure validity and reliability in assessment. Higher Education institutions are accountable to the Tertiary Education Quality and Standards Agency (TEQSA), Australia's independent national regulator of the higher education sector. Standards based assessment informs students of the criteria and performance standards used to judge their work. Standards based assessment also enables student to compare between themselves, their peers and the discipline, based on their achievement of the standards against the criteria. Deakin University's focus is also on digital learning evidence, assurance of graduate capabilities and graduate employability. Analytic standards are also used to describe separate levels of performance for each criterion in the form of a marking rubric. to give more detailed feedback to students and to feed-forward into further assessment in the course.

Deakin University is also in the midst of an assessment project to enhance courses through:

- **Engaging** (learning outcomes and standards through engaging assessment, resources and experiences - in the cloud and on location)
- **Effective** (as evidenced by quality indicators such as graduate satisfaction and employability)
- **Efficient** (ensuring sustainability and affordability) learning, teaching and assessment. Each course and unit within the learning path are being redesigned for learning, specifically ensuring:
  - course learning outcomes aligned to Deakin's Graduate Outcomes (*Discipline Specific Knowledge, Communication, Digital Literacy, Critical Thinking, Problem Solving, Self Management, Teamwork, Global Citizenship*) and accreditation requirements and standards
  - unit learning outcomes aligned to assessment tasks.

Assessment is re-framed as an opportunity for students to create evidence of their achievement of the Graduate Learning Outcomes. All students are encouraged to curate the evidence in a portfolio - this could be an e-portfolio in CloudDeakin, a personal digital space or through personally reflective professional social media channels such as Weebly, Wix and LinkedIn.

Our key strategies of evidencing learning include - Assessing, evidencing and evaluating graduate capabilities. Figure 1 demonstrates our key graduate learning outcomes developed in all students during their studies, with the cycle of assurance shown in the circular graphic. Note portfolio is a major contributor in the cycle to evidence outcomes.
As Professor Beverley Oliver, Deakin University Deputy Vice-Chancellor (Education) describes, it is important to “encourage all students to adopt the habit of creating and curating evidence towards Deakin’s Graduate Learning Outcomes as expressed in their discipline and intended professional life” (Oliver Document 2014). Figure 2 further explores Deakin’s underpinning curriculum model and how evidence is curated during the life of a students course.

Through constructed curriculum, evidence is built for students via assessment and experience (see figure 2&3).

**Evidencing learning for graduate employability**

The working assumption throughout this study is that portfolios are valuable tools for demonstrating, capturing and evidencing graduate skills and capabilities. Assessment and career portfolios have been for
sometime showcased in higher education in Australia. Portfolios are also becoming more prevalent in disciplines with professional or accredited programs where evidence of graduate employability skills and professional standards across a range of capabilities is critical to employability. The most recent evidence of this commitment came at the University Australia 2014 conference in Canberra, Australia where a new agreement between Universities Australia and business groups to support “work-readiness of university graduates, expand their job opportunities as well as enhance outcomes for employers” was agreed to (26 Feb, 2014). Oliver (2009, 2010, 2011) suggests, the relevance of digital portfolios to higher education student learning in providing evidence for graduate employability is becoming increasingly warranted. As Oliver et al. (2009) argues, eportfolios are “an interface for collecting and sharing evidence of learning and professional development” and demonstrate “recognition that learning happens both within and beyond the formal classroom” (p.1). The growing importance of demonstrating ‘graduate learning outcomes’ has necessitated a revision of traditional assessment practice in a degree program at Deakin University (figure 3). What is apparent in this study is the student’s lack of knowledge in communicating this. As a result the refinement of the research question has reinforced the need for professional learning, student capacity building and more discourse about portfolios and their value for learning in higher education.

**Integrative learning and Career Development Learning**

In supporting the integration of the portfolio into courses and unit, Careers Educators suggest that provision of workshops that delivered by Career Educators focused on Career Development Learning (CDL); CDL based on the DOTS (Decision Making, Opportunity Awareness, Transition Learning, and Self Awareness (Deakin University, 2010)) model of career development as well as other theories provides the rationale and context for much ePortfolio activity. For example students are introduced in their first year of study to CDL via situated workshops which focus on skills development relevant to a particular discipline. Figure 4 is a screen grab from in-class CDL focusing on careers development and recording skills via portfolio.

![Figure 4. Career Development Learning in IT](image-url)

Further along their course progression students are asked to identify and reflect upon their skills, interests and values in order to re-define their career goals to help them make decisions as to suitable jobs and workplaces. Their sense of self awareness is built upon through helping them identify those jobs, careers and employers they wish to target when they start seeking employment; this is the beginning of developing a
professional identity. Further, students are encouraged to match their skills to those required by employers and specific roles and to identify any deficits so they can take action to address these and become more competitive in the job market. Finally workshops and online resources are provided to assist students to produce excellent targeted applications and to prepare them for interviews. CDL units clearly aligns with and supports the integration of ePortfolio; the activities undertaken through CDL are designed to be recorded in the ePortfolio and, being collated and reflected upon, they enhance students’ development of self-management, employability and professional identity.

Sensemaking and the ‘grand narrative’
Standing on the shoulders of the ePortfolio giants has allowed us in the study to further develop our own disciplinary perspectives on portfolio and build on the practice and case studies in the field. One area we found the space to generate new knowledge in portfolios, was sensemaking and narrative. Sensemaking for graduates is an important capability, for transferability of disciplinary knowledge and employability through the graduate outcomes. Many graduates have their ‘aha’ moments in the workplace, long after their studies are complete. They have the realisation that the course development was planned and realise why they completed the pre-requisite course and programs as they did. They often also realise why key terms, bodies of literature and outcomes were assessed. To make this more explicit to our students, we developed course maps through the course enhancement process and as a result of prompts in coalition meetings and homework began developing ideas to implement and develop a course-wide approach to portfolio development through the grand narrative as a metaphor for curation of learning evidence.

This metaphor has become an important theme in our practice particularly in the B.International Studies. In the Post Modern Condition: A report on Knowledge, Lyotard (1979) refers to narrative knowledge and the role of storytelling as narrative. Applied to the B.IS, this is interpreted as meaning that students need to be able to explain what they have studied under the heading of International Studies. As an interdisciplinary course in which students select one major from a choice of nine (International Relations, Politics and Policy Studies, Middle East Studies, Anthropology, Language and Culture Studies, Arabic, Indonesian, Arabic, Chinese, or Spanish), and up to ten electives and at least one international experience, beyond the six core units the course is highly individually personalised. While in many ways this is a positive, it makes it essential that graduates can narrate their unit selections and how their course developed, since it does not speak for itself in the same way that a course with professional accreditation or mostly standardised content can, so employers don’t always know what to expect. Lyotard’s concept is taken a step further in that the B.IS aims to facilitate the creation of reflective storytellers who can explain not only what they did, but why they made a particular choice and what they gained from it, and the applicability of their learning to other contexts. While ideally this would be an ongoing process over the course of a student’s studies, in practice Kierkegaard’s maxim that life must be lived forward but can only be understood backwards more closely reflects the experience of most students. As such, we wanted to explore how portfolio could be used to support the sensemaking and narrative processes for B.IS students at the end of their courses by providing an opportunity to look back at their studies and achievements and understand how it all links together.

2. Processes of inquiry

This research has been approached as a meta-research project, metaphorically ‘standing on the shoulders of giants’. A range of research and evidence based papers on portfolios for learning have been consulted (Batson, 2013, 2014, 2015; Eynon, Gambina, Torok, 2014), portfolios for integrated learning (Coleman, Cox, Das, Flood, Polly, Thai & Yang, 2013), career development learning portfolios for graduate employability
(McKenzie, Palmer, Coldwell-Neilson & Coleman, 2014) and witnessed many different approaches to portfolios in higher education (Rhodes, 2014; Allen & Coleman, 2012; Hallam et al, 2008)

What have we learned?
Portfolios mean different things to different people and disciplines. Variation in meaning occurs in different contexts; for each audience and for each purpose. We have iteratively designed an approach to portfolios in two disciplinary contexts to further our inquiry. These two case studies have been selected because of the ongoing engagement with the INCEPR cohort and coalition and focus on how we introduced portfolio over the last 3 years, the benefits, challenges and strategies we have developed for portfolios.

Our iterative practice has been informed by evidence based research using the Stanford d.school Design thinking methodology. Design thinking has worked well in our inter-disciplinary and cross-disciplinary approach to portfolio learning design and been key to the shared successes we present in our main findings. Figure 5 adapted from Kenn Fischer’s (2013) demonstrates a the process of ‘Transforming Design Thinking Through the Translational Design of Learning and Knowledge Environments’ process. This model informed our meta-research project by enabling a problem based research model extended by the Deakin model of action research (McKernan, 1991 in Wilkinson, 2014).

![Figure 5: Adapted from the research/practice nexus (Fisher, 2013)](image)

The approach to the research utilised Fishers (2013) model supplemented with refinement through what Wilkinson (2014) refers to as a “reflective spiral” (p. 75). In designing the ill-defined and experiential question for this study - What is core to Portfolio at Deakin? through reflection and re-reflection the learning design and assessment of the portfolio was re-designed. The reflective spiral required engagement with many factors to consider what is core to Portfolio at Deakin. Firstly the language of portfolio from a local, national and international perspective was explored. Different disciplines have very different uses of an ePortfolio (process, product, showcase, career/cv, assessment, learning and journal), varied pedagogy and technology needs. Overtime it became apparent how discipline specific (local) issues impacted upon the ways in which Portfolio was adopted by both staff and students. The case studies presented next in the main findings and highlight examples from Information Technology and International Studies that demonstrate the local language of Portfolio. A key point of contention regarding Portfolio pedagogy is that of reflection. The importance of reflection towards successful portfolio creation (in any context) was agreed, however development of reflection within each discipline is a variable. Including what reflection is, the act of curation, the reflection of intent, reflection as artefact or as evidence. One issue identified was related to ways in which to get students to engage with the language of reflection for portfolio curation. Not only did students
need to embrace the discipline specific/local language of Portfolio, they also need to consider how to successfully reflect and build skills from a global perspective. As shown in Figure 2, Deakin University aims to enable each student to develop generic graduate outcomes evidenced during the course of their studies. Developing the local, national and international language of Portfolio required significant changes to learning design and assessment to ensure appropriate and effective evidence mapping of student skills to learning outcomes that could be reported in Portfolio. In this landscape of developing local language and reflection many questions were posed:

1. How do we translate this thinking into a language students can understand?
2. And how do we do this with discipline, university, and Australian Qualification Frameworks learning outcomes?
3. How do we translate skills for the global perspective?

The approach used to address these sub questions and continue the cycles of research investigation was inspired by design thinking. Morris and Wagner (2015) present an example of using design thinking to define teaching and learning in higher education. The steps involved in design thinking are demonstrated in Figure 6.

![Figure 6: Steps in a Design Thinking Process (Ratcliffe 2009)](image)

In our context the steps in design thinking can be described as:

- **Empathise**: Observe and investigate the terrain of ePortfolios in Higher Education for careers, personalised learning, capstone and assessment.
- **Define**: Examine a range of views and perspectives (POV) through looking, learning and designing together as a multi-disciplinary team across all faculties at Deakin
- **Ideate**: Iteratively design and develop a range of templates for the B.IT that involved all key stakeholders
- **Prototype**: Iterative implementation and re-design
- **Test**: Through our graduates, what portfolios will look like as a capstone unit in the B.IS.
Outcomes from the design thinking process resulted in an attempt to articulate the complex framework of evidencing learning at Deakin University. Figure 7 was developed during the research process that show the multiple requirements that go into learning and assessment design at Deakin, and how courses (programs) are designed to consider the graduate attributes of: Deakin’s Graduate Learning Outcomes, Academic Literacies, Discipline Professional Skills and Digital Literacies.

![Figure 7: Evidencing Learning within Assessment at Deakin University](image)

After exploration of the formal language of Portfolio, testing and iteration in design thinking, the process of redesign of learning and assessment was undertaken. Again, the case studies presented next in the main findings and highlight examples from Information Technology and International Studies that demonstrate the learning and assessment design. Also, papers published as a part of our exploration into Portfolio further evidence our approach. See Section 6: Application of Findings. Overall the design process remained iterative and critical of our main research question which is **What is core to Portfolio at Deakin?**

### 3. Main findings

As educative spaces, portfolios enable both a self-directed and an individualised approach to learning that promotes lifelong and life wide capabilities. As learners develop the appropriate skills to self regulate their learning and become responsible for their learning beyond the walls of the classroom, they can engage both individually and collaboratively in the portfolio. For educators seeking to develop personalised learning spaces or environments in their assessment, the portfolio to enable this transition and opportunity was used.
As Hughes (2008) suggests, the cognitive skills required for self-directed students in a portfolio are: ‘collect, select, reflect, connect.’ We have included curate in our cyclical portfolio development (see figure X). These skills are inherent concepts of any university graduate. The implementation of technical proficiency for both staff and students and the ability to critically reflect and select work for assessment however, takes time. The aim of this INCEPR project was to encourage innovation in assessment to better support student learning outcomes and evidence of learning over time, with particular focus on the Deakin Graduate Learning Outcomes in the Faculty of Arts and Education and Faculty of Science, Engineering and Built Environment.

This project report seeks to demonstrate the many benefits of portfolio assessment as learning. These include:

- Acting as sustainable assessment (Boud, 2000) that enable students to firstly identify their learning, make judgements about their learning and prepare them for future learning in and outside of the discipline.
- Enabling the monitoring of student performance as ongoing evidence-based assessment throughout the course.
- Providing a site for feedback that can be enacted upon and saved for future use.
- Encouraging students to be self-directed and reflective in owning their portfolio space, helping the learner to take responsibility for their own learning and evidencing assessment.
- Acting as a reflective bridge allowing students to make connections between tacit knowledge and constructed knowledge.
- Tracking learner accomplishments and feedback over a sustained period of time through ongoing formative and summative assessment.
- Supporting the integration into learning and assessment of graduate skills, experiences and disciplinary knowledge.

At Deakin University we have developed resources to support:

- Engagement of staff and students with portfolio pedagogy, shifting mindsets.
- Clear articulation of requirements.
- Aligning value of an ePortfolio within the discipline.
- Establishing a clear link with academic skills such as reflection and research skills.

Principles for effective and engaging Portfolio practice:

1. Engage thinking about using a Portfolio for evidencing learning. Develop a discourse in the local context that reflects on national and international cases.
2. Explore the use of portfolio thinking, portfolios for learning, assessment, careers and capstone in their disciplinary context use and accept an ePortfolio as a part of the curriculum.
3. Formulate new approaches to incorporating an ePortfolio as a part of course-wide curriculum.
4. Discover how an ePortfolio needs to be reflective of students readiness for employability and how an ePortfolio can develop this through feedback, collaboration and new knowledge development through reflection.
What makes our Portfolio Assessment Valid?

Standards not standardisation.
We have focused on credibility of discipline based assessment, credible assurance of the quality of the assessment tasks and the assurance of the quality of the judgments. We are focused on what types of assessment are most likely to provide convincing evidence of a student's achievement of progress towards Deakin graduate learning outcomes and what processes best assure the quality of assessment of these

Deakin Graduate Learning Outcomes.
As Moss, Girard and Haniford (2011) suggest, “validity refers to the soundness of those interpretations, decisions or actions” – these interpretations, decisions or actions in our standards-based assessment context invites students into the conversation about, which criteria that their work will be judged against and the standards attached to each of these criteria against the learning outcomes. The standards, tells students what performance is required and allows the portfolio reader/assessor to make comparisons between students based on their achievement of the standards. For use in portfolio assessment, standards-based assessment provides guidance to students about what's important in the presentation or view provided of their learning and assessment, while encouraging students to understand the goals and standards in order to work towards and fosters grading consistency over time. As Royce Sadler (2005) points out, "students deserve to be graded on the basis of the quality of their work alone, uncontaminated by reference to how other students in the course perform on the same or equivalent tasks, and without regard to each student's previous level of performance. These two conditions set criteria-based grading apart from all forms of norm-referencing and self-referencing, but they do not specify how it should be done." He goes on to add, "students deserve to know the criteria by which judgments will be made about the quality of their work. This has a primarily prospective purpose, which is to enable learners to use the information to shape their work intelligently and appropriately while it is being developed. However, specifying the bases for grading also serves retrospectively in that stated criteria help to provide a rationale for grading judgments after they have been made and the results given back to the students."

4. Case Studies

Case Study 1: Bachelor of Information Technology
In the Bachelor of Information Technology we have been playing with portfolio since 2012. At this time the School of Information Technology regarded development of a professional portfolio as a useful tool to enable students in their career preparation, thus a school wide initiative to introduce portfolio began. In 2015 endeavours to support students in portfolio creation continue, however it was from early investigations into portfolio (in 2012) that the true nature and use of an portfolio in IT became apparent. Below we will summarise one case study from IT which evidences how portfolio was used as an assessment activity.

One particular discipline where curation and dissemination of an portfolio is required is that of Games Design and Development (GDD). Games are an exciting yet demanding profession that requires a demonstration of skills via a portfolio (physical or electronic). Competitive employment requires that educational providers strongly support students to collate and present their skills and abilities. In addition students have to be prepared for career readiness and to support self-efficacy.

In 2012 we rolled out portfolio based assessment in GDD, with one class in particular focusing on the skills required for successful portfolio construction. This class was called ‘Audio and Visual Game Elements’ and
asked students to conduct a folio based on the audio and visual game components they developed during the teaching period. The assessment for the class consisted of:

- 30% Test
- 70% Folio: Where students have to think creatively and imaginatively by setting their own design agenda and choose assets to develop via a production pipeline. The assessment is broken up into the following stages: 3 x 10% progressive folio submissions, 1 x 10% oral presentation, 1 x 30% final folio

The progressive folio submission was an important, reciprocal, one on one feedback and discussion activity to enable students to understand the current gaps in their folio construction. The progressive folio asked students to think critically regarding their folio progress and reflect on the way in which they could improve their folio for future submissions. The image to the right is an example of a final folio submission from the student.

![Figure 8: Bach of IT Student Folio](image)

The assessment epitomises a student centred approach via progressively working on portfolio assets with formative feedback and guidance provided throughout the trimester. The revised approach reflects the requirements of industry (as confirmed by the School of IT industry advisory board), as it equips students with a way to demonstrate their skills beyond the final class grade. Furthermore, the approach allows for a greater variety of assessment tasks and greater alignment to unit and course learning outcomes.

A key skill which is developed when building a portfolio is reflective skills. Reflection allows students to refine their folio focus and requisite skills to achieve their goals. However being a successful reflective practitioner is not an easy task! To assist the students with this activity we developed resources, in partnership with the student cohort, to breakdown the process of reflection. The image below is an screen grab from the video on reflective skills.
The change to portfolio pedagogy as achieved in Audio and Visual Games Elements is unique for the IT students, yet the ability of portfolio to provide individualised learning experiences was highly appreciated. Example student evaluations comments include: “I really liked the way the portfolio work was planned out, showing weekly progress was possibly the best way of me keeping up to date and getting the best out of my portfolio”. In addition to the comments the unit results distribution shows that student outcomes from the unit since refinement have been higher, with HD and D grades rising from 13% and 20% in 2011 to 20% and 28% respectively in 2012. The outcomes from using ePortfolio for assessment in Audio and Visual Game Elements are very positive. Students valued the motivation towards ePortfolio creation as it facilitated personalised learning and supported students in their skills development relevant for their future career.

Other portfolio explorations have occurred in the School of IT in an effort to assist students in developing skills for successful curation. However, our experiences have also uncovered issues in the ways in which a portfolio pedagogy should be employed in the practically oriented discipline of IT. Students in IT find the concept of creating a portfolio for their future career as a secondary notion to achieving good grades. The value behind curating, reflecting, discussing and reporting on learning is a very difficult task to motivate students to achieve. As described in the Audio and Visual Game Elements example above, students in IT will only engage with portfolio when it is either directly related to assessment or when the value of portfolio is highly articulated towards future employability. Developing motivation in portfolio pedagogy is not limited to students, with staff unaware of the extent to which using portfolio requires significant modification to their teaching pedagogy. Thus the use of portfolio in the School of IT largely remains a class based approach, pushed forward by staff who embrace the value of students curating personal learning outcomes. In addition our explorations have evidenced that the best use of a portfolio for a student’s future is in curating one for employability rather than as an outcome of learning. In IT students view their studies as a means to get a job, rather than as a learning journey. This outlook impacts the value students put on their studies and the ways in which they want to form evidence from their time at University.

Future activities in the School of IT to change practice and embrace portfolio pedagogy across the program includes implementation of extensive online resources that assist students to develop their own portfolio for employability.

**Case Study 2: Bachelor of International Studies**

The Bachelor of International Studies is an interdisciplinary humanities degree program with a compulsory international experience requirement and an explicit commitment to facilitating the development of skills and
capabilities required for working in international environments. Having been launched in 2009, it has gone through three iterations since then to reach its current structure (see below) of 6 core units, choice of major sequence, and second major/minor/electives, with the 24 credit points including at least two credit points of international experience (drawn from study tours, study abroad/exchange, in-country language courses and/or international internships).

Figure 10: Course structure of the Bachelor of International Studies (2014 onwards)
As noted earlier, the sole attempt to utilise an portfolio in a unit prior to the Course Enhancement process had been unsuccessful. At the same time, interactions with students who were undertaking internships and discussions with student representatives on the course Advisory Board, indicated that there was a clear need to help students articulate and evidence the skills they were gaining over the course and especially from their international experiences - almost all of them described it as “the best thing I’ve done”, but getting them to reflect on why this was the case and link it back to their studies was far more problematic, even in the case of strong students.

While completing the mapping of the Deakin Graduate Learning Outcomes (DGLOs) to the core units of the Bachelor of International Studies as required by the first stages of the Course Enhancement process, it occurred to me that getting students to conduct a similar mapping exercise along with evidencing could be a way to promote a more holistic understanding of the course and encourage students to reflect on their learning over its duration and articulate and evidence it - in other words, function as a true capstone for the course. This offered a potential solution to the problem of not being able for resourcing reasons to follow the best practice advice of embedding portfolios in the course from year one and could also be utilised to change students’ understandings of portfolios from being about the product to being about the process, in line with portfolio pedagogy.

In order to see whether this could work and what issues would need to be addressed in order to develop a viable and effective capstone unit, two students were recruited to try building a Bachelor of International Studies graduate portfolio and provide feedback on their experience. Both students were completing the final 2-3 units of their course and undertook the project as a credit bearing internship. While it was initially tempting to try and give very prescriptive instructions about what was required technologically and in terms of content, in the end the students were given a brief that set parameters for the portfolio, but left them to work out the details:

**Outcome/Deliverable:** Presentation of an electronic portfolio evidencing achievement of the Bachelor of International Studies Course Learning Outcomes and Deakin Graduate Learning Outcomes with accompanying report on its development.

**Time commitment:** Approximately 150 hours (equivalent to 20 working days) of portfolio development (writing, making notes on what works/doesn’t work, what questions arise as you work on the project), plus approximately 150 hours on consultation with supervisor, research, and completion of AIS330 assessment tasks.

**Instructions/Requirements:** Develop and compile a portfolio on a platform of your choice that evidences how you have met the Deakin Graduate Learning Outcomes (DGLOs) over the course of your Bachelor of International Studies program. You can find a brief description of the DGLOs at http://www.deakin.edu.au/students/university-handbook/2013/deakin-graduate-learning-outcomes, and the Bachelor of International Studies Course Learning Outcomes (CLOs) are attached.

The portfolio should contain the following pages/sections as a minimum (you can add pages/sections if you feel if is needed/beneficial):

1. Introduction/Student profile
2. Disciplinary Knowledge (International Studies plus major)
3. Communication
4. Digital Literacy
5. Critical Thinking
6. Problem Solving
7. Self-Management
8. Teamwork
9. Global Citizenship

Page/Section 1 should introduce you (who are you as a BIS student) and your portfolio.

Pages/Sections 2-8 should all contain the following elements:

a) Statement of the GLO/CLO and what it means (your interpretation of it)
b) Reflection on how you have achieved this GLO/CLO during your studies
c) Reflection on what the significance of your learning in relation to this GLO/CLO is for you and your future
d) Evidence (artefacts) to support your reflection - at least two thirds of artefacts must be related to units that you have taken, but you can include some artefacts from extra-curricular activities if you wish.

In addition to the content, you need to pay attention to the presentation and formatting of the page. All pages/sections should make use of text and image in some way. You may also want to include audio or audio-visual materials, either as artefacts or as part of your reflection and/or evidencing.

These are the basic requirements and I have deliberately not been any more prescriptive as part of the exercise is to see what works and what doesn’t work based on your experience. Which brings me to:

**Project reporting:** Since the project is a test run to help work out how best to set up a Bachelor of International Studies Graduate Folio unit, I’m extremely interested not only in the folio as an end result, but also in your experience of the process and thoughts and ideas about how students developing a folio (it would be a 1 credit point unit) could be supported effectively. What would it have been useful to know at different points? How do you/did you understand the purpose of a folio? How do you/did you feel about reflection? What have you learnt from the project? What is a good balance between evidence from units that you have taken and evidence from extra-curricular activities?

These are just a few questions to give you an idea of the sort of thing I’m looking for. You can consider these questions in all of the assessment tasks, but it would be helpful if you could keep an additional record of some sort.

The two portfolios produced as a result of this project were very different. One was outward-looking and focused on showcasing the author to an external audience such as potential employers, while the other was more inward-looking and explicitly reflective, focusing on how each DGLO could be evidenced.
Figure 11: Screen shot of Emily Ebbott’s portfolio http://emilyebbott.wix.com/deakineportfolio2015
Encouragingly, both students felt that the exercise of creating a portfolio had been beneficial for them. As they commented:

Over the past three months I have researched, analysed and self-reflect upon many different aspects of my degree and delved into the world of ePortfolios and their benefits to one’s education. The following assessments have been made. The use of ePortfolios is a beneficial tool for educational purposes in order to self-reflect upon many different aspects of your degree and academic achievements. It allows you to creatively present how those achievements have influenced you as a graduate and a professional. […] Reflecting upon all the incidents when I have achieved these Outcomes [sic] has been one of the most influential academic, professional and personal achievement of mine, as previously stated, creating a [sic] ePortfolio of this magnitude allows me to take enormous pride in my achievements and academic pursuits over the past three years. (Emily)
An e-portfolio is particularly useful as a tool for reflection on learning. It creates an environment where a student remains engaged with a body of work during an entire course of study rather than consigning first year work to a box in the back of a cupboard, for example. (Matthew)

While only a very small scale project, these conclusions confirmed that the process of creating a portfolio has significant potential for scaffolding students’ understanding and articulation of the meta-narrative of their course by encouraging them to shift their focus from individual units towards making connections between units and experiences both inside and outside the classroom and institution.

However, the students’ reports on their experience of creating a portfolio in response to the brief provided confirmed that they had encountered similar issues in developing their portfolios. Four issues in particular stood out, as outlined below along with our interpretation of their importance:

*What’s the point of doing this?*

Especially early on, even though they understood the brief and output, it was evident that the students struggled to link the process of portfolio creation and curation to the development of meta-cognitive skills and the capacity for reflective narration. Rather, they identified how the process could assist them with demonstrating specific skills or learning outcomes such as digital literacy or global citizenship, or using the final portfolio in a particular way, such as using it as a showcase for potential employers. Helping them see the “bigger picture” of their course involved reframing the students’ experience of being a university student as one of telling a retrospective story about their personal and professional growth over several years, as Kate’s email (sent February 18, 2015) to Emily illustrates:

[...] a portfolio is at its most basic is a multi-modal narrative. A story re-told and constructed by you in a curated space.

Your profile should begin with an I Am statement. Something to introduce your readers to who you are. What your identity is as learner and through an introductory set of sentences who you are now as professional in your discipline.

I am statements are bios written in the first person. They invite your audience into the purpose of your portfolio and set the tone for the rest of the pages to follow. For a capstone portfolio I would have a 150-200 word I am or about me statement.

The disciplinary knowledge one is about you as a discipline expert. You began your journey in the discipline of international studies as a novice. Unaware of the world through the eyes of the academy. This page in your graduate journal asks that you are able to present the skills, experience and knowledge that you have gained as you have moved towards expert. What lens do you now see the world through as a result of being let through the gate so to speak. The course names may be a part of the story, but possibly not, it should be more about the learning journey. Is it the internships and integrated experiences that allowed you to see how much your thinking had changed? Is it that the opportunities you have had through evidencing your learning (that is what we call assessment) that have altered your world view? How have YOU changed over the last few years and the course knowledge in the discipline played a part in this?? Who are you now? This is a story, told through a number of modes. Video, photographs, text in the form of reflection, assessment samples, feedback etc. When were the AHA moments? When did you see the path that the course was laying or did you direct it yourself? You haven’t had a chance to tell this story before - so go for it!!
Thanks to interventions such as these, over the duration of the project, the narrative potential of portfolios became far more evident to both students (see comments on page 24-25). However, it is not a process that can be left to chance and points to the fact that portfolio thinking needs to be explicitly discussed with students when they begin creating their portfolio. This is especially important as it often contrasts starkly with students’ pre-existing understandings of learning as being primarily time limited (that is, occurring only over the duration of a specific unit) and measured by outcomes. Shifting to emphasise process and the culmination of knowledge and experience involves “unlearning” in a similar way to that required by problem-based learning (Wilkinson 2014). Scaffolding this process effectively is crucial as one is in effect removing the old scaffolding (dependent students for whom learning is equated with success in assessment) and leaving students unsupported is likely to reduce their capacity to transition to viewing themselves as independent and lifelong learners, at least in the shorter term.

Platforms and format

Neither student wished to utilise the portfolio function built into CloudDeakin. Indeed, during initial discussions of the project, one of the students commented that their “only request is that please don’t make me use the Deakin eportfolio [sic] template on Cloud Deakin because it is horrible”¹, reiterating this view bluntly in their final report: “The reality is that in a competitive employment environment no-one would realistically present work on that platform” (a point that also emerged from the B.IT pilot project). Choice of platform was seen as important for ownership and personalisation, while open platforms were seen as positive for permitting external engagement and making the portfolio more authentic and useful by giving students “real world” experience.

At the same time, not all students will be familiar with suitable platforms from the outset, so if a choice is going to be permitted, time for students to explore and experiment needs to be factored in. Moreover, the use of open platforms increases the importance of discussing aspects of digital literacy such as copyright and protecting intellectual property rights, and also reputational management. While this may seem like an additional burden initially, integration of such discussions links well to portfolio thinking and promoting reflection, as well as providing a way to scaffold the portfolio creation process in the early stages.

What evidence is there?!

Asking even the most engaged student to recall everything that they did over a 3-5 year period is a tall order. This is a doubly the case when the course and graduate learning outcomes that they are supposed to be evidencing did not exist until the final stages of their studies, and reflects the fact that a fully aligned curriculum is only guaranteed from 2014 onwards. For students who commenced their courses earlier, therefore, the Deakin Graduate Learning Outcomes have been retrofitted, meaning that it was not always clear how to evidence them, especially when personal circumstances are factored in, as Matthew observed in a post to the Facebook group that was used for discussion:

1 Personal email communication 5 May 2014.
From the perspective of successful portfolio implementation, this type of retrofitting is not desirable and risks reducing student buy-in and confidence. Happily, with the completion of the Course Enhancement process, which began with a course mapping exercise to ensure all of the DGLOs were covered in any course or major, this is no longer an issue. Indeed, a similar course mapping exercise can be used to facilitate student thinking about how to evidence each DGLO effectively by giving them an initial opportunity to conduct a “stock take” of potential artefacts and sources of evidence.

The other issue that evidencing brought out was the need for a portfolio to combine curricular and extra-curricular activities. For example, despite being an on-campus student, Emily’s evidencing of how she met the Teamwork DGLO drew on a combination of activities:
Matthew’s discussion of Global Citizenship, the final of the eight DLOs and one that is paramount for the BIS, took the combining of curricular and extra-curricular a step further, using the portfolio to produce a new artefact and reflection in one that demonstrated his understanding of global citizenship through an application to a new context, in this case in the form of a photo essay. As he explained:

Importantly, global citizenship is today’s reality whether by choice or circumstance. Just as digital literacy is a necessity (and also a stated Deakin Graduate Outcome) a level of global citizenship must be acquired to participate within a modern community (unless an individual decides to withdraw from a society) especially one that is globalized and strongly connected by technology, social media, and ever expanding communication advances.

This can also be simply translated and demonstrated at a localised level. To simply exist within my own community I have to navigate several disparate ethnic, religious, and cultural communities that all co-exist in an environment centred on a stretch of street less that one kilometer in length.

The following series of photographs all taken along Church Avenue in Brooklyn, New York, demonstrates what that co-existence looks like and how a variety of different groups mesh to form a vibrant and thriving community that can serve the needs of specific community and the wider community at large at the same time.²

On the one hand, this response was borne out the necessity of being “creative” due to his course pre-dating a fully aligned curriculum. On the other, having to think laterally and problem solve, rather than having a predetermined map of artefacts to DGLOs was a definite advantage. Firstly, it demonstrated the importance

² https://matthewhallportfolio.wordpress.com/global-citizenship/
of seeing the course as a whole story with multiple threads and moments that were interwoven and connected, and secondly it began to break down the distinction between learning undertaken in a formal learning environment (whether in a classroom or online), and learning in other settings via participation in different activities and communities - an important "aha" moment in reframing students' perceptions of the value and benefit of their university experience. Finally, it also confirmed the idea that reflection can be an artefact in its own right and hence a solution to any lack of evidence, as Matthew's global citizenship photo essay amply demonstrated.

Community, collaboration and evolution

The temptation is to see portfolios as highly individual and individualised projects that primarily showcase the student or graduate. However, with the shift to focus on process and promoting a new model of learning, the importance of collaboration and opportunities for discussion became very evident. Both students noted the challenge of feeling isolated, although Emily's perception was perhaps more acute due to having completed the majority of her course on-campus:

During the beginning of the project I felt slightly separated from both my supervisor and my fellow student. This was rectified once I began to share ideas and worries with my fellow student. Once I returned home I spoke to my supervisor and the level of information was greatly appreciated because there is only so much one can convey via email through no fault of either party. More integration and possible Skype sessions would have been beneficial although due to time difference made it quite difficult. (Emily)

A Facebook group was set up at the start of the project and served as an effective forum for discussion and sharing of ideas. The choice of platform was significant and reflected the fact that it was a platform that all participants in the project already used, thereby avoiding having to log into CloudDeakin. Matthew explained the importance of this extremely clearly in the concluding recommendations of his project report:

Students in many units are encouraged to use discussion groups on the Deakin cloud system to interact with cohort, either informally or with particular relevance to unit topics. In some cases, this interaction is compulsory and forms part of assessment. In my experience, unless interaction in discussion forums is compulsory, use of that platform is non-existent. Using the Deakin experience as a guide, this "closed room" approach was counter-productive. The best communication tool is one that students already use – platforms like Facebook or Twitter. In units that adopted these platforms there was more engagement, communication and – importantly – sharing of ideas. Enabled by active social networks, communication bloomed. Content from an e-portfolio can be shared via these platforms (Facebook, Twitter), again expanding the opportunity for student communication, feedback, and reflection. This could be of particular use to off-campus students as experiential evidence suggests in-house platforms do not encourage wide nor regular participation.

Finally, greater awareness of the collaborative nature of learning led to a different understanding of outcomes, with a move away from the idea of learning is finite and merely about finding the "right" answer and towards embracing contingent and iterative knowledge production. Matthew illustrated this point with reference to David Carr's approach to teaching a course online for the first time:

Part of Carr's point in this comment [to students of an online course he was teaching for the first time that it would be "exciting and sometimes very confusing"] is that the digitalisation of media and communication is inescapable, offers great opportunities, and is evolving. In an environment that
therefore is evolving, perfection is difficult to achieve and trial, error, and failure can be considered an important part of a learning process. What is considered right today can be wrong tomorrow or, at least, improved upon later. While Carr was referencing – perhaps even warning students about – his approach to teaching, the same philosophy can and should apply to learning. An e-portfolio which documents a student’s evolution is the perfect tool, much like an analog scrapbook, to accompany that transition. It will not always be perfect – the finished article – but, like the student, it will or at least should evolve.

5. **The value of your participation in the Coalition for your research and/or practice**

“The interchange of new learning experiences between the members of the group has been likened to symbiosis by Revans. The potential valency of each member of the group—and hence the symbiotic effect—can be reinforced by the group leader or set adviser and this is a distinctive characteristic of the action learning model” (MacNamara, 1982).

What we have learned from the study and coalition cohort:

- The need for a team of inter-disciplinary practitioners and researchers for support, feedback and implementation
- When we work in collaboration there is a better understanding and transference of knowledge in the community
- There is research to complete and further develop on the role of a portfolio pedagogy and technology in context, disciplines and approaches within the university.
- There is research needed to address and further develop reflective teaching practice within international approaches.
- There is research to be undertaken and further developed on PBL and portfolios.

What we have learned from the propositions:

- For meaningful assessment, interaction of pieces of evidence within an portfolio is more important than single pieces of evidence.
- Reflection on pieces of evidence within an portfolio and on the portfolio as a whole provides information for assessment that is not available by other means.
- The material practice of portfolio composition generates distinctive knowledge about learning.
- Portfolios enable meaningful comparison of student learning across institutions (and other contexts) without standardisation (Cambridge, Cambridge and Yancey, 2012).

The propositions have encouraged critical discourse about the ways in which we are using an portfolio across different disciplines particularly focusing on:

- Curation as a skill to be taught and assessed;
- Reflection as an artefact in itself rather than something that supports/explains an artefact;
- Importance of aligned curriculum for a meaningful portfolio in terms of having a clear understanding of what the portfolio is for (i.e. what’s the aim?) and how to get there; and,
What exactly we are assessing with the eportfolio.

We have found the propositions useful in our iterative design.

Proposition 1
As a tool for learning, reflection on learning and presentation; meaningful assessment and 'reading' of the many layers in a portfolio including relationships between artefacts and the curation of these artefacts and evidence is an imperative for interactions to be meaningful in the narrative for an audience. However, due to the changing nature of portfolios for learning, assessment and careers with more use of institutional digital badges, the very nature of artefacts and evidence and the language we use to define them will also change. With badges on top of portfolios, in portfolios and possibly badge portfolios what's behind the badge rather than the interaction will be more important. Of course, this is all dependent on audience and purpose as is the first proposition.

Proposition 2
The process of reflection as articulated in the different discipline was striking. This proposition allowed us to explore exactly what reflection was within discipline, as well as mechanisms for building and articulating reflection within students. This 'skill' takes much time to build, yet is an important layer in the assessment process. We found that the relationship between the evidence and reflections can be achieved through constructed reflections on evidence or 'in action' (Schon, 1983) through the curatorial decisions made as the page or presentation in designed.

Proposition 3
Our case studies have both explored the complex ways in which a portfolio can be used in a particular discipline. Of significance is the ways in which the aims or a portfolio is articulated to students. The learner's identity and knowledge of the content is evident in both the uses of media and the the curatorial decisions made in constructing a presentation. The interaction of artefacts and evidence as a curated page create a narrative that represent the learner in the discipline, profession and are indicative of the learner's representation of self. The viewer of the portfolio can see transformative evidence curated by the learner and how the learner has designed their learning journey. This is all dependent again on the purpose and audience of the portfolio and differs strongly based on discipline.

Proposition 4
We developed a greater understanding of portfolios in the North American context through this proposition. We had difficulty with it in our context, however, it helped us appreciate the importance of context and the limits of standards. Articulate methods of portfolio assessment are still developing in our context. On both a smaller (class) to larger (course) based perspective we need to refine and mature our portfolio offerings to ensure they meet the expectations of students, teachers and employers.

6. Plans for dissemination and/or application of findings

We hope to further apply our emergent findings throughout the university and to support portfolio pedagogy for our colleagues. This includes to a wider higher education audience. Our INCEPR publications to date include:
7. **Next questions emerging from your inquiry**

How can we further develop backward course design to develop capstone graduate employability portfolios?

How can we further support course based implementation of portfolios across a range of courses utilising the expertise of the INCEPR team?

How can we develop portfolio thinking and curation skills to support learners in making badge claims for Deakin Hallmarks?

**References and Resources**


Deakin University (2010), 'Improving Graduate Employability: Embedding Career Planning and Development in the Curriculum', (Burwood, Australia: Deakin University).


