

Jennifer Rowley *Editor*

ePortfolios in Australian Universities

 Springer

ePortfolios in Australian Universities

A word cloud of educational and professional development terms. The words are arranged in a roughly rectangular shape, with some larger and some smaller. The terms include:

- BARRIERS
- PEDAGOGY
- INTERACTIONS
- DEEP-KNOWLEDGE
- LIFELONG-LEARNING
- EXPERTISE
- ACCEPTANCE
- CAPSTONE
- EVIDENCE
- TECHNOLOGY
- EXPERIENCE
- TRANSITION
- LITERACY
- PERSONAL-LEARNING
- CURRICULUM
- REFLECTIVE-PRACTICE
- EXPERIENTIAL-LEARNING
- INFORMATION
- WORK-READY
- ATTRIBUTES
- BLOG-POST
- SCAFFOLD
- CHALLENGES
- BENEFIT
- ONLINE
- LEARNING
- COLLECTIVE
- COMPETENCE
- COMMUNITY-OF-PRACTICE
- ENHANCEMENT
- CAREER-IDENTITY
- SHARED-REPERTOIRE
- COMMUNITY-OF-PRACTICE
- ENHANCEMENT
- PORTFOLIO
- ASSESSMENT
- ENGAGEMENT
- DIGITAL
- MEASUREMENT
- NEGOTIATED-MEANING
- OPPORTUNITIES
- SENSE-OF-SELF
- GRADUATE
- LOGISTICS
- ROBUST
- IDENTITY
- VALUE-ADD
- FLEXIBILITY
- MEASUREMENT
- NEGOTIATED-MEANING
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Foreword: What We Learn from This Portfolio Collection

In the 1980s in the United States and the United Kingdom, *portfolios for learning* were invented and conventionalised. These portfolios were created in print, of course, but they set the stage for current 'e'Portfolio theory and practice and thus for the chapters in this *collection* which, in itself, is something of a portfolio given its curation of chapters and its reflective character. It's worth taking a moment, therefore, to consider what is understood about the portfolio movement internationally before considering what the chapters within this collection have to teach us.

In the United States, teachers of mathematics and writing in the late twentieth century, in classrooms spanning kindergarten to university, began using portfolios in their teaching. The portfolios at this time were defined as collections of work selected from a larger archive and were contextualised and narrated by the student composer (Yancey, 1992). In part, teachers were motivated by the opportunity to bring together teaching and assessment. Portfolios provided a natural site, a unique place, for students to gather and review their work, and the collections they created provided a full, rich portrait of student learning, much fuller and much richer than the portrait provided by standardised tests, single essays, or responses to math problems. In part, teachers were also motivated by the ability of the portfolio to include students' process pieces so that the connection between process and product could be traced. Diverse pieces of work contributing to a final product, much like Picasso's charcoal sketches leading to a finished assemblage, were included in these portfolios. Thus, process texts like rough drafts of essays and beginning calculations for math problems and the final texts to which they contributed, both types of texts included in a portfolio, demonstrated the paths students had taken to their conclusions. In part, teachers liked assessing authentic evidence located in the work students created in the classroom. Students too liked the portfolio, liked the new role they had as 'agents of their own learning' (Yancey, 1998), liked explaining what they had learned, how they had developed, how well they had succeeded ... or not.

In the United Kingdom during this time, portfolios were also identified as a mechanism for professional development for teachers. Meeting in groups, for example, teachers could review a portfolio to consider the fit between a student, his or her learning journey, and the curriculum. More specifically, teachers work in

teams we now call professional learning communities (PLC) and study the texts inside the portfolio through the lenses provided by a four-part heuristic: Who is this student?; What resources does he or she draw upon?; What does he or she do well?; and What next steps are possible and helpful? (Dixon, 1991). Educators at the time saw through the frame of the portfolio the mechanics of how a student learned, the kinds of resources that were tapped, and about what next steps might be best. Put another way, in portfolio-based professional development practices like this, teachers learned about the efficacy of their curricula and about ways to support all learners.

Fast forward to 2016: portfolios, whilst maintaining a focus on student learning, have engaged all corners of the world as the print model went electronic, and hence the 'e' in ePortfolio emerged somewhere in the 1990s. In the portfolio of chapters presented here in this collection, we learn specifically about the results of this shift, about ePortfolio practice and research as they have been developed in Australia and internationally, and we find that there is much to learn. In one chapter, for example, we learn about the ecologies hosting worldwide ePortfolio efforts providing the backdrop for Australian models: 'International ePortfolio professional learning ecosystems', 'ePortfolio system-based portfolio professional learning ecosystems', 'Australia-wide ePortfolio professional learning ecosystems', and 'Cross-organisational ePortfolio professional learning ecosystems'. Much like their print cousins, the electronic portfolios here are oriented first to pedagogy: as one chapter puts it, 'the student ePortfolio is pedagogy: it is a way of learning and teaching'.

We learn as well about a range of such models in practice, about portfolios in creative arts and in medical science, about portfolios promoting identity formation and supporting employability, and about portfolios that attempt to do both in the context of a longer, cross-disciplinary history: 'A portfolio as a conveyance of a person's achievements has its professional genesis in the creative arts since the early 1800s. From the 1900s, graphic design, photography, architecture, music, and fine arts have also relied heavily on the use of portfolios for career purposes.' Like their antecedents, the portfolio models and programmes profiled here in this collection are also acts of invention, creating new models of learning that in the current case are especially indebted to the potential of the digital and to the practice of reflection.

Reading across the chapters, we encounter common experiences echoing lessons learned in other ePortfolio contexts. Implementation of ePortfolios, one chapter asserts, is hard and raises unanticipated difficulties and challenges, among which, another chapter claims, is 'the perception of increased workload', a challenge posing as a 'prevalent barrier to using ePortfolios'. Key to successful ePortfolio efforts, according to another chapter, is identifying and clarifying the portfolio's purpose: 'Without understanding the purpose, introducing ePortfolios is largely without merit.' In other words, as a genre the portfolio is located in its purpose, an observation that is true for higher education portfolios as for portfolios in other fields: it's a function of the genre rather than being a culturally specific issue. Not surprisingly, students and staff find exemplars helpful, in part because the genre of ePortfolio is new to some, so still in development. Indeed, much of what is described in this

collection of research case studies is synonymous with what many researchers have discovered globally when challenging curriculum renewal, introducing innovative pedagogy, and considering the enhancement of students' learning.

Embedded in these discussions, of course, is the issue of technology. Worldwide, it's not uncommon for technology to focus ePortfolio efforts, but in these chapters, technology is a support, a critical one, but not the focus. In one chapter, for example, we learn that students resist 'institutionally provided proprietary software platforms' and that they prefer platforms supporting more of their learning and their agency. At the same time, for ePortfolios to flourish, students do need to know how to use the ePortfolio technology, which they can practice alongside learning about reflection: the 'issues of workload and need for reflective writing coaching were mitigated by training the tutors to more closely support students in reflective writing and to ensure all students were introduced to the technology within a compulsory unit tutorial session'. Ideally, as reported in one chapter, the technology provides a 'student-owned and student-managed' space that offers a future: it 'remains fully supported for students after graduation through alumni access'.

The provision for such a future is in fact a distinguishing feature of ePortfolios. Print portfolios, modelled on a book (Yancey, 2004), are closed texts, with beginnings and conclusions; in contrast, ePortfolios, much like galleries or studios, offer many spaces for work to be displayed and, if designed to do so, continue to be open and available for future work. Moreover, we know from research (e.g. Hilgers & Stitt Bergh, 1999; Robinson & Burton, 2010) that when students understand that their work has a future and that what they are learning can provide a pathway to that future, they are better motivated, and in some cases, the quality of the work itself improves. What is also needed for learning to flourish, as is made plain here, is reflection. Brandsford et al.'s (2000) book *How People Learn* suggests that reflection is critical for securing learning, and again, in this collection we see all of these components come together in the QUT model which, like other models seen globally, explained and illustrated encounters with technology as the first obstacle, but as a lesser one to reflection, which provides the real challenge and the real reward.

We read throughout this collection of how the ePortfolio (as an online tool) can provide an electronic space that has the potential to enhance higher education graduate capabilities and employment skills. This personal learning space provides students with their own canvas to create and curate evidence of learning. This feature is buoyant and goes beyond the single opportunity of a portfolio to store files. Portfolios were, at first, widely perceived as a collection (or archive) of experiences, achievements, and evidence. It was only as the portfolio emerged as a valuable learning tool that educators saw the potential for these collections to be developed through critical reflection. Despite early emphasis on use of the 'technology', the chapters here in this collection demonstrate how it was recognised that the process of critical reflection, required to create and curate the ePortfolio, presented students and academics with a challenge at least as great as the technology. Furthermore, a consensus about best ePortfolio practices internationally and in Australia is emerging. These practices include the ideas that, as one chapter explains, ePortfolio

pedagogy must drive the technology and not contrariwise and that students require structure and scaffolding to develop reflective writing skills.

Interestingly, much like print portfolios, but perhaps even more so, electronic portfolios need to be integrated into students' curricular lives. Learning requires scaffolding, and the purpose of the portfolio and the ways that it fits and supports the curriculum should be transparent. Again interestingly, although electronic portfolios permit and support multiple kinds of modalities for reflection (e.g. video and maps), reflective *writing* is privileged here, as it is in the United States (Yancey 2009; Kahn et al., 2015): indeed, how to define reflective writing, how to teach it, and how to understand it epistemologically is a subject of considerable attention in the United States, not only among writing studies faculty but also among ePortfolio practitioners and scholars (see, e.g. Yancey, 2016). As important and as defined in this collection, electronic portfolios, like reflection, are *social* (Yancey, 2014), involving not only faculty assessment but also peer assessment which is an important point and a promising practice that especially merit attention. Taken together, these ideas, in addition to mapping Australian ePortfolio theory, practice, and research, are both helpful and welcome to those of us outside Australia as well.

Indeed, the idea of ePortfolios as a social practice, as it is explained in this book, is a particularly compelling one: what does it mean to create a portfolio in a company of one's peers? Here, I'm reminded of what Etienne Wenger (1998) calls a community of practice. As Wenger explains, a community of practice is organised by commonalities, rituals, rules, conventions (including various kinds of interactions), and ideologies, and a primary mechanism for regulating and supporting a given community is peer review. We see this in action in this collection with professional writing students who, like Julie Hughes' (2009) teacher candidates in the United Kingdom, find a blogging space hospitable for individually and collectively making a transition from the academy into the workplace. We see this in action as well with medical science students developing so-called soft skills like 'contribution, collaboration, and role play', especially as they develop these through reflective practice. In this chapter, the medical students were introduced to peer evaluation as an important aspect of teamwork and a part of the process for students to practice reviewing the work of their peers and give feedback. 'We believe this is a first stage to building professional skills for medical science students that will have lifelong benefits, which can be easily adopted to support other skills development and applied in other programmes.' Here, what's particularly valuable is the way that the ePortfolio hosts, situates, and contributes to a community of practice. Logically, it makes sense to do so, but we as an international ePortfolio community of practice have not attended to the linkage between the two, at least in the ePortfolio literature, until recently.

Which is yet another reason this collection that follows is such a welcome contribution to the ePortfolio field. As we learn about Australian ePortfolio theory, practice, and research, we learn as well about more generalised ePortfolio issues globally such as ways of supporting reflective writing; the importance of an ePort-

folio technology responsive to the needs and aspirations of students; peer review and its role in an ePortfolio community of practice; and the ePortfolio as site of different kinds of learning journeys and critical transitions which affects all of us globally interested in learning with and supporting students.

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Preface

It's not new. Portfolios have been around for many, many years (see Blom & Hitchcock this anthology) in areas such as architecture, dress design, dance, visual arts, engineering, nursing, and teaching, just to name a few. All disciplines have asked at one time for evidence of skills, achievements, and qualifications that one has capacity to undertake a role. This is more than showcasing what you can do or presenting what you have done – it is a visual and robust story of who you are.

This anthology presents a view of the electronic portfolio through the eyes of experienced practitioners who have had the word ePortfolio in their vocabulary for many years. As educators, the authors of the 12 chapters presented here have their own story to tell about learning and teaching, institutional challenges, implementation, opportunities, and communities of practice in Australia and globally. The world of higher education is one that expects a vigorous robust investigation into the benefit of new technologies and the effectiveness on student learning. The authors have boldly entered the digital space of Portfolios and present advice, caution, and success stories of their research into enhanced learning and teaching. This book is important as we continue to journey further into the world of accountability for our craft and remain dedicated to providing the optimal learning experience for our students.

To begin, there is a short historical account of the Portfolio emerging as a digital tool internationally and how Australian higher education saw this form of pedagogic practice as essential for developing graduate qualities for a better-prepared graduate. It explores the ecology of ePortfolios with a snapshot of past, present, and future uses (see Miller this anthology) to continue the emerging community of practice that allows full-bodied discourse through what is known as the ePortfolio Australia network.

This is followed by a chapter that describes how one Australia university embraced the research behind ePortfolio process and products and implemented it institutionally. This was managed as a result of the commissioned research project into the benefit of ePortfolio practice for students learning incrementally over a period of time, and the centre of excellence continues today as a centre for the institutionally managed ePortfolio. The original instigators of the Australian ePortfolio

project from 2008 are still dedicated to this endeavour (see McAllister and Hauville this anthology).

Applying the idea of incremental introduction of new pedagogy is better serviced when staff have been afforded training and resources. The chapter by Strampel, Sibson, and Main details the identification of key stakeholders and the professional development workshops that were designed to empower the teachers of students who would be the beneficiaries of the introduction of ePortfolios into their degree programme.

Introducing a new pedagogy and a new tool into any faculty requires some form of 'buy in' from staff, and the story of ePortfolios embedded into a medical science degree programme is verified by the number of authors who contributed to the chapter. The lead academic saw the need for teamwork to be a part of the curriculum and rallied colleagues to embed ePortfolio and reflection into the 10 subjects within the 4-year degree programme with a vision to enhance learning for the students who were encouraged to reflect on their achievements of working in teams. As an intentional curriculum designed to develop the graduate skill of teamwork, the ePortfolio was introduced as assessment task throughout the 4 years to encourage teamwork and collaboration.

Both Strampel et al. and Polly et al.'s chapters refer to and use the AACU (American Association of Colleges and Universities) as a model for their work in measuring standards-based approaches to assessment. In fact, many authors in the anthology use ePortfolios for assessing and for developing graduate skills in the belief that both the process and products generated by the Portfolio assist in developing a work-ready graduate for a future career.

Most introductions of new pedagogy are often questioned for its effectiveness; the chapter by Bennett and Robertson clearly indicates good pedagogy coupled with robust research can create a valuable impact for students. They detail the community of practice that developed through using ePortfolio with students at their university with a clear vision of improving career identity. The story of the writing students' approach to embracing the portfolio as a pedagogic tool for increasing career awareness is one that demonstrates the power of student enjoyment in a process.

The academic staff at a music faculty wanted to promote metacognition and critical thinking whilst encouraging the development of reflective practice and so carried out research over 5 years into differing students' views of the ePortfolio practice. Depending on degree specialisation, the music students all had a view on the benefit and challenge of the ePortfolio design and value and soon realised that the affordances of the system created wider opportunities. It was evidence from this longitudinal research that ePortfolio was not a teaching and learning tool to everyone's taste or benefit. The music education students were the most receptive as they could see the aim was not only for them to demonstrate their skills against the graduate teaching standards, but to curate learning experiences over their degree and develop a philosophy of teaching.

Brooks introduces the reader to the term 'chronicle' to explain the purpose of the ePortfolios by describing the similarities and differences between two cohorts of

teacher education students who were introduced to the ePortfolio process and platforms. An initial idea to use an ePortfolio to record evidence against graduating teaching standards for students studying in the Bachelor of Music (Music Education) evolved into a richer and pedagogically healthy process supporting teacher development. The students studying to be primary teachers had a simpler technology to navigate yet experienced different challenges and similar barriers to the technology tool.

Newly introduced graduate teacher standards saw the need for a way to capture and record evidence against the standards. In the chapter by Munday, we see teacher education students actually using the ePortfolio to help them to build a professional identity and sense of self and to showcase this because it's purposeful. Asking appropriate and pertinent reflective questions and making students assemble their knowledge and their experience in a meaningful way means making them really focus on self-control through the creation of the portfolio product. This increases their self-identity and their self-awareness and gives them a self-determination.

Returning to the medical science field, we are introduced to a story of blended learning for medical sonographers who were incrementally introduced to the process of assembling evidence of their skills development through the ePortfolio. As this programme had international students who were not able to benefit from face-to-face teaching, the challenges and successes of the ePortfolio for managing a learning environment are detailed.

Blom and Hitchcock present a model that activates a developmental process for those starting with an ePortfolio. Their exploration of two cohorts of music students demonstrates the ease with which some can manage the learning space and the challenges that others face when the technology becomes a barrier to learning. The story they report explores some of the valuable use of the ePortfolio process and student perceptions of those who have traditionally used portfolio practice where the technology was insignificant to them ... showing us that there is not a simple answer to any journey of engaging students in their learning.

Returning to the track of institutionally introduced ePortfolios is the story of a more recent introduction into a regional university who researched thoroughly the journey of their implementation across degree programmes by reflecting on what was needed and how to best manage the staff and students who were to benefit from the personal learning space that the portfolio platform, PebblePad, afforded them.

We finish this anthology back at the beginning concept where the ePortfolio is described as a developmental ecosystem and defined as a function for building professional capabilities. The concept of an ecosystem implies a growth that has multiple components, and this final chapter contains student comments that support the final chapter's model and its description of the ePortfolio's impact on the development of a work-ready graduate. In fact, we conclude by claiming that it is during this developmental phase of students' learning that they are developing their professional identity through the acquisition and practising of graduate capabilities.

It is becoming clear that the 'e' in 'ePortfolio' may become redundant as we live in an electronic world where literacy is only digital. Through the presentation of the portfolio ecosystem model, we see the immortalising of the portfolio technology

tool that represents the story of how it is that you choose to present your educational capacity.

As a member of a vibrant ePortfolio community of practice, I have had the absolute pleasure to engage and work with many of the authors of this book who are dedicated and committed educators and hold high the belief in research into good teaching and learning practice is of benefit to students. I thank them for their commitment and shared vision for engaging students in a real-world experience, where the value of learning is predominantly surrounded by thorough research, supportive colleagues, and strong convictions of education. This book is dedicated to all who have entered the domain of exploring pedagogic practice for the benefit of enhanced student learning.

This book would not have come about without the mentoring and encouragement of a colleague, Associate Professor Dunbar-Hall who was instrumental in supporting my entrance into ePortfolio research many years ago. I thank Peter for his belief that striving for excellence and good pedagogic practice is a worthwhile endeavour.

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Chapter 1

Professional Learning Ecosystem Support for ePortfolio Use in Australian Higher Education: An Historical Perspective

Allison Miller

Abstract Professional learning can be defined as the diverse learning opportunities undertaken by educators to improve their individual professional practice with the aim of creating beneficial learning environments for their students. Supporting educators wishing to implement, and ultimately embed, the use of ePortfolio practices into their teaching programs requires the support of an ePortfolio professional learning ecosystem. This is created when educators come together to share established practice and research, are given opportunities to participate in reflective dialogue and private reflection, and have the opportunity to apply and refine their ideas and practices. An ePortfolio professional learning ecosystem cannot rely on one source of input, such as a university's professional development and networking opportunities. Rather, it requires the support of a wider, collaborative community of practice to create exemplary ePortfolio practice for learners. Such an ecosystem also requires the support of established users of ePortfolio in educational programs to share their experiences, both positive and negative. ePortfolios Australia was established in 2008 as one such professional learning ecosystem to provide experienced educators with a means to support their continued ePortfolio professional learning, and to help refine and seek validation of their own ePortfolio practices. This chapter explores the evolution of ePortfolio professional learning ecosystems at international, national, system and local levels through an historical perspective, and outlines the impetus of ePortfolios Australia as a contributor, its current status, and how and why this has supported Australian higher education's use of ePortfolio.

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Introduction

Hallam, Harper, Hauville, Creagh and McAllister (2009, p 2) through the Australian ePortfolio Project – Stage 2 (AeP2) found that a professional learning ecosystem in a community of practice (CoP) “was seen to be an important initiative that would help consolidate current levels of interest and foster and strengthen the networking and relationships that are already emerging amongst those involved in ePortfolio learning”. Hallam et al. also identified that “there is strong support for a CoP to support ePortfolio practice”, in particular, “the concept of a hybrid forum that blends the benefits of an online community with opportunities for face-to-face meetings” (p 2).

During 2009–2010, the Australian Flexible Learning Framework ePortfolios Business Activity (2010) provided seed funding to a number of vocational education and training (VET) organisations as part of their ePortfolios implementation trials to investigate the use of ePortfolios with learners. These trials examined the way ePortfolios can support learners to successfully gain a qualification through recognition of prior learning (RPL), fast tracking apprenticeships/traineeships, and/or helping learners transition into further education, training or employment. Evidence gathered in the trials provided information about the way teachers/trainers, workplace supervisors/management and VET training organisations could better support learners to: manage their own learning; demonstrate their existing skills and knowledge; and/or achieve their professional, career or educational goals through the successful implementation of an ePortfolio system.

Based on these trials, Miller and O'Neill (2011) found, that in order for teachers/trainers to use ePortfolio as part of their students' training and assessment, they needed structured and 'just in time' professional development to understand how best to support learners to present and manage information within an ePortfolio environment. Hence, developing teacher/trainers' digital literacy skills as part of the implementation process was important. Support to help teachers/trainers develop this understanding included providing training/information about a number of issues, including, privacy, ownership and security issues associated with ePortfolio; integration of learner-centred pedagogical approaches; and incorporating self-assessment or reflective activities as part of their learners' ePortfolio experience (Troupiotis, 2010). Teachers/trainers also needed help in developing their understanding of how best to use an ePortfolio for e-assessment and in developing their professional judgement around validating and verifying digital evidence in an ePortfolio environment, for example, in determining the types of digital evidence such as photos, video and audio files which are suitable for collection by learners into their ePortfolios. Miller and O'Neill found that helping teachers/trainers connect with other educators experienced in the use of ePortfolios through local and more widely dispersed CoPs could help support some of the teachers/trainers' professional development needs. They also found that this could support their new and continuing ePortfolio learning and development through professional conversations and/or accessing or developing collaborative support resources.

ePortfolio professional learning ecosystems have acted as a means by which universities and individuals new to ePortfolio can gain information about their use. These ecosystems can be categorised into four types:

1. International ePortfolio professional learning ecosystems
2. ePortfolio system-based ePortfolio professional learning ecosystems
3. Australia-wide ePortfolio professional learning ecosystems, and
4. Cross-organisational ePortfolio professional learning ecosystems.

The following presents an overview of ecosystems organised under these categorisational headings. It is presented as an historical survey of how professional learning ecosystems have assisted in embedding ePortfolio into Australian higher education. This overview is not exhaustive, drawing rather on examples that have been, and continue to be, significant in this context.

International ePortfolio Professional Learning Ecosystems

European Institute for eLearning (EIFEL) Leading the way was the European Institute for eLearning (EIFEL, 2015a) created in 2001 as a non-profit professional association with members from around Europe. EIFEL aimed to support the continuing professional development of members through an annual International Conference, still in force, and through national ePortfolio events, and coordinating and promoting ePortfolio developments in Europe and beyond.

In 2003, EIFEL (2015b) launched the campaign “ePortfolio for all” Europeans to help support the goals of the 2010 Lisbon Strategy, which was to make the European Union a highly competitive and dynamic knowledge-based economy which generated more and better jobs and greater social cohesion by the year 2010. The main objective of the 2010 “ePortfolio for all” campaign was for all European citizens to have access to an ePortfolio by 2010 giving them opportunity to take advantage of the full benefits an ePortfolio can bring when moving and working through Europe. While this did not happen, this ground breaking work led to many other ePortfolio projects.

In 2006, EIFEL (Baker, 2006) led a European and international study called “eStrategies for Empowering Individuals” to identify the key factors to successful ePortfolio initiatives and implementation, and to measure the readiness of ePortfolio policies and strategies. Research (Edwards & Baker, 2006, p 8) found that there should be people that an educator using ePortfolios can “go to for support in the implementation of ePortfolios and in designing, constructing, and managing learning and training environments”, and that it was a good idea to have a steering committee of colleagues from different backgrounds to gain different perspectives on this matter.

EIFEL enabled a European professional learning community through a series of annual ePortfolio events led by the creator of EIFEL, Serge Ravet, starting in 2003 with the first international conference for ePortfolio in France, through to present

day ePortfolio and Identify Conferences (ePIC) (Europortfolio, nd.a) which focus on ePortfolios, open badges and identity.

European Network of ePortfolio Experts & Practitioners (EPNET) is a European consortia-led project made possible from funding under the Lifelong Learning Project ICT (Key Activity 3) initiative (EACEA, 2013). The main goal of this network is “to establish a European Cooperation Network of experts and practitioners from four sectors in the field of ePortfolios: Further and Higher Education; Vocational Education and Training; Employment; and Lifelong Learning – all the actors of nonformal and informal learning” (European Network of ePortfolio Experts & Practitioners, 2015b).

EPNET’s outwardly facing arm is Europortfolio, which is a not-for-profit association “dedicated to exploring how ePortfolios and ePortfolio related technologies and practices can help empower individuals, organisations and wider society. Europortfolio provides a network for those doing ePortfolio and related work across Europe; to build the use of e-portfolios across communities, and to provide opportunities for future partnership working” (European Network of ePortfolio Experts & Practitioners, 2015b).

The Europortfolio Charter “defines how individuals can contribute to the Europortfolio activities and benefit from the outcomes, in particular the production and exploitation of resources to support the implementation and development of ePortfolios” (European Network of ePortfolio Experts & Practitioners, 2015b). Europortfolio members are also major supporters of annual ePortfolio and Identity Conference (ePIC) events. European work on ePortfolios has also been supported by UK-based ePortfolio professional learning ecosystems through the Centre for Recording Achievement (CRA), Joint Information Systems Committee (JISC) and Centre for International ePortfolio Development (CIePD).

Centre for Recording Achievement (CRA) is a cross-sectoral organisation which started in the early 2000s with the remit “to promote awareness and understanding of the processes associated with Professional Development Planning (review, reflection, planning) as an important element in improving learning and progression throughout the world of education, training and employment” (Ward, 2008). CRA continues to offer Professional Development Planning and ePortfolio consultancy, and evaluation of existing ePortfolio practice (CRA, 2015) and also offers face-to-face and online ePortfolio professional development activities, including an annual CRA Residential Seminar; The International Journal for Recording Achievement, Planning and Portfolios (RAPPORT); and working in partnership with Europortfolio and US-based, Authentic, Experiential & Evidence-Based Learning (AAEEBL) (discussed below).

Joint Information Systems Committee (JISC) is non-departmental public body which supports “post-16 and higher education and research by providing leadership in the use of information and communications technology in learning, teaching, research and administration” (JISC, 2015). During 2008–2012, JISC funded a range of ePortfolio projects which “helped reduce barriers to implementation and established e-portfolios as vital tools for learning” (JISC, 2015). These projects produced

a range of research reports and resources to help better develop ePortfolio implementers' and users' understandings of ePortfolios and how they add value to learning and assessment. These outputs include:

- Eportfolios guide (2008, updated 2012) – <https://www.jisc.ac.uk/full-guide/e-portfolios>
- Crossing the Threshold: Moving e-portfolios into the mainstream (2012) <http://www.webarchive.org.uk/wayback/archive/20140615090731/http://www.jisc.ac.uk/media/documents/programmes/elearning/eportfolios/threshold.pdf>
- The e-portfolio implementation toolkit (2012) – <https://epip.pbworks.com/w/page/28670505/The%20e-portfolio%20implementation%20toolkit>

Centre for International ePortfolio Development (CIePD) During 2003–2013, CIePD was asked to work “with infrastructure and technology for user-focussed, policy-driven technical developments”. Their research “demonstrated how introducing new technology in specific ways can instigate change” (Centre for International ePortfolio Development, 2015). CIePD worked in partnership with JISC and other European organisations, and completed an extensive amount of ePortfolio project work including:

- Specifying an ePortfolio – <http://www.nottingham.ac.uk/ciepd/projects/completed-projects/specifying-an-eportfolio/specifying-an-eportfolio.aspx>
- eP4LL (ePortfolio for Lifelong Learning) eFramework – <http://www.nottingham.ac.uk/ciepd/projects/completed-projects/ep4ll/ep4ll.aspx>

Inter/National Coalition for Electronic Portfolio Research (NCEPR) lead the way as it “convenes research/practitioners to study the impact of ePortfolios on student learning and educational outcomes” (NCEPR, 2015). Membership of NCEPR is through an institute-based application process. Successful applicants join a cohort of ten institutions that work together to undertake research for a 3 year period. Cohorts generally involve non-North American institutes and meet annually.

NCEPR contributes to the international and North American ePortfolio professional learning ecosystem through, releasing emergent findings, publications and presentations, and (until 2008) the Connector newsletter.

Authentic, Experiential & Evidence-Based Learning (AAEEBL) is the sister of North American ePortfolio professional learning community. This is a membership-based professional association with the goal “to promote portfolio learning as a major way to transform higher education” with the view that “Portfolio Learning shifts more initiative to learners to guide their own learning and is, importantly, a model of learning that fits the mobile learning characteristic of this era” (AAEEL, 2015a). AAEEBL sponsors research, such as the ePortfolio Survey, which produced an insight into ePortfolio use, mainly in North America (Brown, Chen, & Gordon, 2012). It also convenes and supports a number of activities including: the National AAEEBL Conference and regional events; the AAEEBL Learner newsletter; webinars and discussions; and the International Journal of ePortfolio (IJeP).