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THE AEEBL ePORTFOLIO REVIEW

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The AAEEBL ePortfolio Review (AePR) is the tri-annual magazine of the Association for Authentic, Experiential and Evidence-Based Learning. The AePR is an online journal serving the needs of the global eportfolio community and seeks to promote portfolio learning as a major way to transform higher education. AePR is sent to AAEEBL members, partner representatives, eportfolio practitioners, administrators, and students. It covers the broad area of eportfolio use including: pedagogy, research (AePR is not a double blind peer-reviewed research journal), technical (including articles about technology), and/or organizational issues.

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Dear readers,

Welcome to the inaugural issue of the AAEEBL ePortfolio Review (AePR)! Designed to provide space for emerging thinking about ePortfolio research and practice, as well as a publication opportunity for those working in and with ePortfolio, the AePR focuses on timely, important topics written by leaders in the field. The articles may focus on a current controversy in our community that perhaps cannot be quickly or expeditiously addressed through a careful research process or on specific topics of interest to the wider ePortfolio community (for instance, assessment, high impact practices, etc.). As such, we welcome articles that are initial reports on research, case studies of ePortfolio practices and pedagogies, and think-pieces that move the field forward. We want to ensure that the AePR is relevant to you and your work with ePortfolios so we also welcome ideas for future issue themes and topics – let us know if you have ideas!

While the AePR offers authoritative views that contribute to our knowledge of ePortfolio, our aim is that the articles published in the AePR will complement the research results available in other publications (such as the *International Journal of ePortfolio*). In this way, the AePR provides an important pathway for authors to share their work with ePortfolio to foster a robust professional conversation about ePortfolios.

AAEEBL is working hard to develop multiple ways for our community to share their work – through conferences and publication pathways that will allow us to transform learning in higher education. We hope you will find the Review a useful and stimulating resource and look forward to receiving your contributions and feedback!

Happy Reading!

Tracy Penny Light
Chair, AAEEBL Board of Directors

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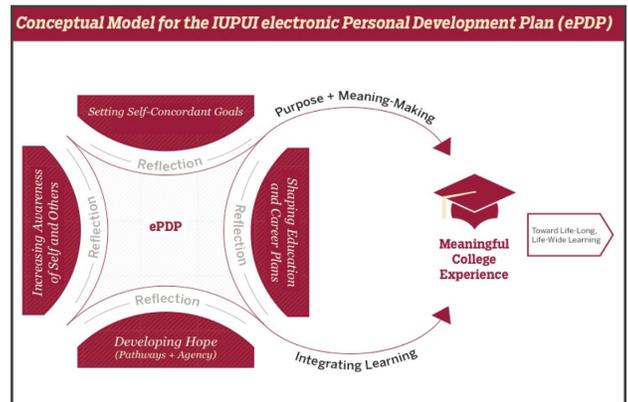
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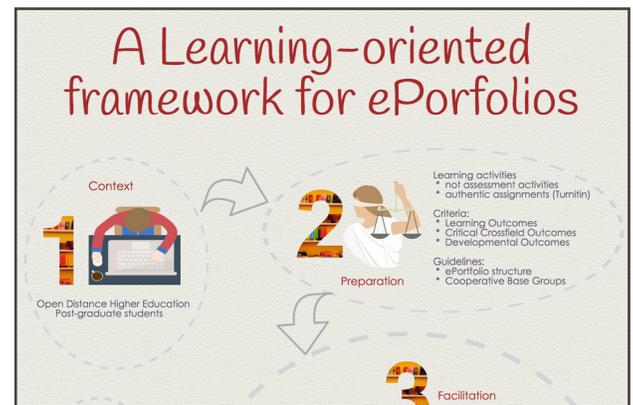
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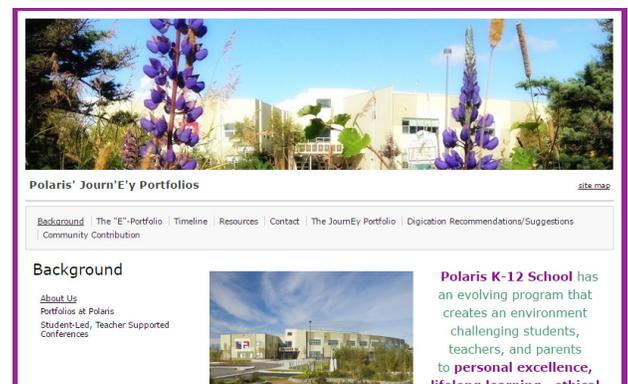
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Polaris' ePortfolio at the University of Alaska Anchorage. Read Journey of the eWolf: ePortfolios in Alaska to learn more about it (page 29).

Dear colleagues,

As the new Co-Executive Editors of The AAEEBL Review (AePR) we are thrilled to bring you our inaugural issue. Building off the success of The Learner, we hope that The AePR will become the flagship publication within the eportfolio field. Besides gaining a whole new look, the scope has also changed and expanded from our previous publication. The AePR will focus on scholarly work, research highlights, program spotlights, and other relevant industry news from both practitioners and our industry partners.

This first issue is based on the theme “evidence-based learning,” as part of the AAEEBL name. In this case, the term applies to learning design and practices that are based in current research on how people learn. Within this issue, we cover topics relevant to practitioners of all levels, from those just getting started to instructors in the field to administrators looking to move the next level. By covering such a wide range, we hope to engage all audiences so that every reader can walk away with at least one insight or new idea to try.

Moving forward, we will publish The AePR three times per year with approximately five to eight articles per issue. The Editorial Board aims to keep the time to article acceptance decisions to a minimum as we work towards raising the awareness of the journal.

Our next issue will focus on reflection. We invite you to submit your research, ideas, and news items for publication. We encourage submission of traditional research, as well as practical discoveries that builds on the eportfolio body of knowledge. To review the author guidelines, and learn more about The AePR, please visit our website aaeebl.org.

Thank you in advance for your valuable contributions to eportfolio community and we are very excited to present to you our first issue.

Sincerely,

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Empowering learners with ePortfolios:

Harnessing the “evidence of experience” for authentic records of achievement

by TRACY PENNY LIGHT

edited by ELAINE GREY

For many years, we have talked about the ways that ePortfolios can provide opportunities for learners to document their learning by making visible the knowledge, skills, and abilities that they develop in higher education.¹ We also know that ePortfolios can provide opportunities for learners to engage in integrative learning, particularly when faculty leverage ePortfolios to meet essential learning outcomes and transform student learning.² Recently, Bass & Eynon note that the need for integration is more critical than ever amidst calls to “unbundle” higher education.³ Instead, they argue for more integrated, “rebundled” systems for learners as they move through an increasingly disintegrated digital ecosystem in higher education. One tool of such integration is the ePortfolio, yet ePortfolio can mean different things to different stakeholders, putting at risk its integrative properties.

At the recent AAEEBL Annual Meeting, a recurring theme among attendees was the lack of one definition of ePortfolio. This ties into the work of Ashley Kehoe, who calls our attention to the fact that the notion of *electronic* portfolios is redundant in a digital world, necessitating a re-thinking of the “e.”⁴ For instance, an alternative

“e” could refer to the ability of the ePortfolio to surface (new) *evidence* of learning beyond traditional educational assignments; to showcase and make connections between learners’ unique and varied learning *experiences*; to demonstrate competencies and abilities for *employment*. All of these uses (and there are more) should empower learners as they develop their unique identities.

While empowerment is often an unarticulated learning outcome in higher education (I realize, for instance, that this is a central goal of mine in my teaching but I have never articulated it for learners in my stated learning outcomes), it seems to me that we could be more intentional with our ePortfolio work to harness the “evidence of [the learner] experience”⁵ to empower our learners. Beyond a more altruistic goal of setting learners up for future success in their lives and careers, focusing our work with ePortfolios this way can open up new possibilities for authentic records of achievement that augment (or may even someday replace) traditional records, such as transcripts, as we aim to recognize the long history of learning across a learning career.⁶ However, such efforts should not be undertaken in isolation – we can only be truly successful harnessing the “evidence of experience” if we do this work in a systematic

way that addresses the goals of the broader learning organization in which the ePortfolio is implemented. In this sense, we might think about all of the stakeholders (learners, instructors, advisors, administrators, etc.) in the learning organization who can be empowered in their learning using ePortfolios. While not all stakeholders may use ePortfolios themselves, making visible the evidence of learning on a campus can allow all involved to develop a better and deeper understanding of the learning goals of the institution. This stakeholders approach⁷ is essential for transforming learning in the academy today because without shared understanding of the power of learner evidence to empower, we risk working at cross-purposes.

We can only be truly successful harnessing the “evidence of experience” if we do this work in a systematic way that addresses the goals of the broader learning organization in which the ePortfolio is implemented.

In this article, I discuss the concepts that frame my thinking, consider the ways ePortfolios can provide authentic evidence that can be used for assessment, and share ideas about the potential that a design focused on pathways for learning has for empowering all learners⁸ in the learning organization to transform higher education. I argue that we need to think carefully about the types of evidence we can make visible using ePortfolios, how that evidence is understood by stakeholders across the institution, and work collectively across our institutions to harness the evidence of experience to create more meaningful and authentic records of learning that empower our learners and stakeholders.

FRAMING CONCEPTS

WHAT IS THE ePORTFOLIO IDEA?

Throughout 2015, AAEEBL hosted a webinar series exploring the ePortfolio idea because there are so many

definitions and uses for eportfolios. As noted above, while no one definition emerged, there are a number of things that seem common to ways of thinking about ePortfolios as a pedagogy and set of practices. Eportfolios are most effective when they contain some reflective process or folio thinking, are learner-centered, provide opportunities for learners to be integrative in their thinking about learning, and help them to illuminate their own learner pathways as they transfer their learning between and among different learning contexts (academic, workplace, community). When implemented with these goals in mind, they provide more authentic evidence of learner achievement than other forms of assessment (like multiple choice exams) because they allow the learner to make visible the ways that their various learning experiences fit together to illuminate their unique identities.

THE “EVIDENCE OF EXPERIENCE”

The relationship between evidence and identity is an important one. As an historian, I am always thinking about the ways that different types of evidence (documents, images, films, etc.) can lead us to various interpretations of the past. In her groundbreaking work on lived experience and history, historian Joan W. Scott theorized about the ways that new evidence of the visual and visceral experiences of historical agents, previously unexplored by historians, could be used to shed light on the “...dimensions of human life and activity usually deemed unworthy of mention in conventional histories.”⁹ While Scott acknowledged the importance of making more visible the range of historical experiences that different evidence affords historians, she cautioned that it was essential to remember that, “it is not individuals who have experience, but subjects who are constituted through experience.”¹⁰ In other words, we must keep in mind that our learners are subjects whose experiences shape how and what they reveal about their learning.¹¹

Scott’s advice to historians about using the “evidence of experience” is equally relevant for us as we think about the ways that our learners document their own learning in ePortfolios. How do the educational systems that they learn in produce certain types of evidence and perhaps not others? In other words, how do courses, programs, or institutions shape learning and the evidence of learning that results? How does the use of evidence of student learning (such as learning in a co-curricular context) support transformative learning or pose challenges for us – how “real” are the learning experiences outside the

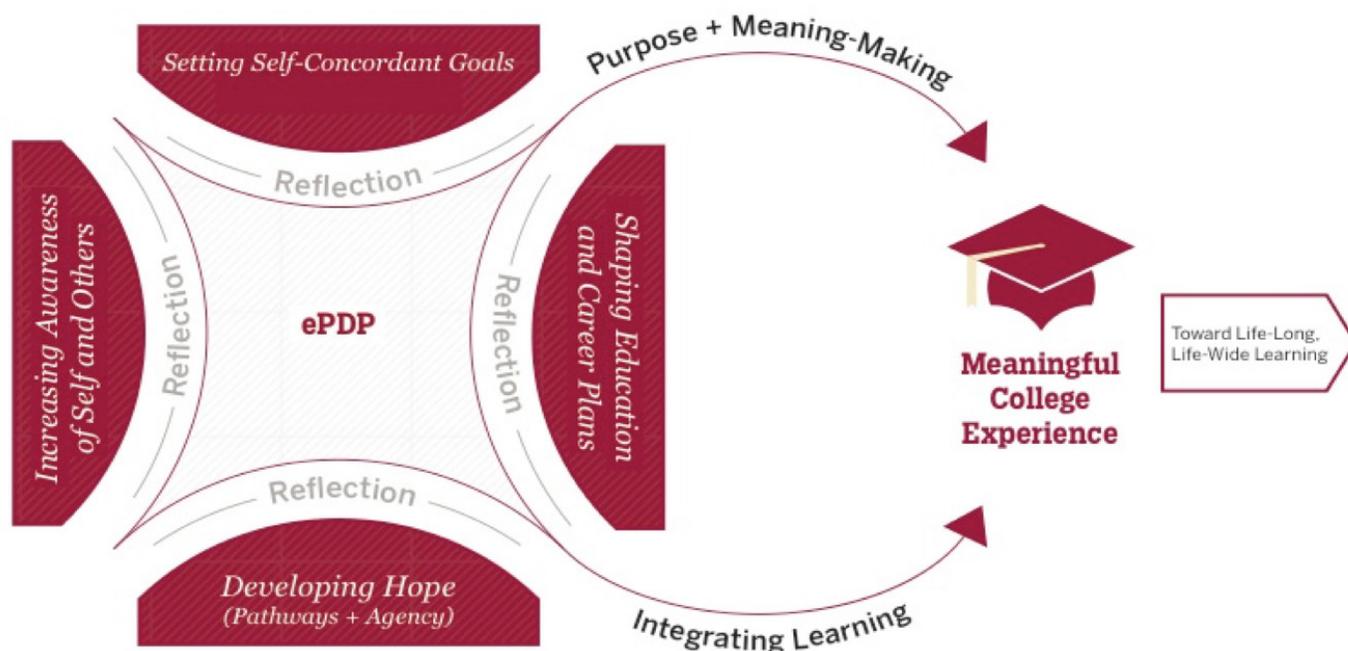
classroom? How much should they “count” for learners who are aiming to document their achievement of particular learning outcomes? Should we provide credit or not for this learning? How these questions are answered depends on both the institutional culture and perspectives on these questions from the stakeholders. For instance, faculty members in different disciplines may have contrasting responses and these may diverge still from the answers provided by Student Affairs professionals or a Dean or Provost. Indeed, this is where I think the “evidence of experience” can provide challenges for us on our campuses as we seek to empower learners. Without some shared sense of why ePortfolios are important and useful to institutions in meeting their stated priorities and

mission, initiatives are put at risk. However, if we connect our ePortfolio initiatives to our broader institutional missions there is a greater chance that the evidence of learning curated by our learners will be valuable and useful to various stakeholders. And since many of our institutions are increasingly focused on providing diverse learning opportunities for students that produce evidence, we should be poised to seize this opportunity.

In their work on improving teaching and learning by making evidence of assessment more visible, Eubanks & Gliem promote enhancing course evaluation and instruction with evidence of learning from outside the traditional classroom. They argue that this allows learners

Fig. 1: IUPUI ePDP Plan. The model, being used in first-year seminars and several degree programs and co-curricular initiatives exemplifies a way to take into account the formation of learner identities as part of the curriculum. Source: Cathy Buyarski and Susan Kahn at IUPUI.¹²

Conceptual Model for the IUPUI electronic Personal Development Plan (ePDP)



to document evidence of a wide range of achievements that allow them to better serve the needs of 21st century society. A richer representation of learning, they suggest, can also increase the public credibility of higher education because “authentic student achievements that are addressed to a real world audience can...add value to degrees and the granting institutions.”¹³ Yet, how do these intentions affect the ways that learner identities are formed?¹⁴

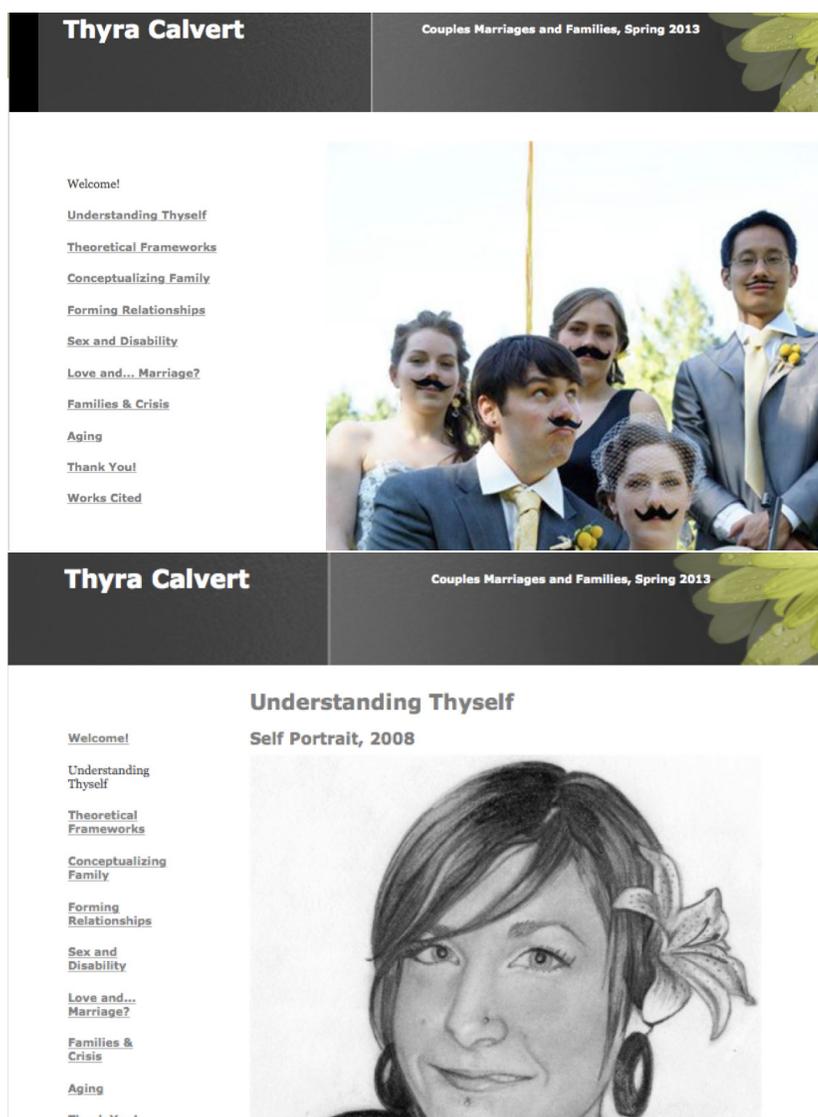
Nguyen suggests thinking about the ways that the “ePortfolio serves as a ‘living portal,’ through which students may continually re-articulate their ideas of self to others, bringing about new understandings and ethical intentions.”¹⁵ We might take this a step further to include our institutional identities in the equation. How might the evidence or learning documented in ePortfolios assist us to articulate clear learning outcomes for students who choose to study on our campus versus another? How might this shared sense of purpose inform a “real world” audience about what types of learning happen on our campuses and how this sets our graduates up for success in their future learning careers? More aligned approaches to answering these questions across the learning organization are needed. We should also work to ensure that our learning designs provide opportunities for learner identity formation without constraining the ability of individual learners to be themselves, rather than just conforming to broader societal and institutional ideals about higher education. It is important, I think, to keep these issues in mind as we design ePortfolio projects aimed at transforming learning.

EPORTFOLIOS, ASSESSMENT & AUTHENTIC EVIDENCE

Paying careful attention to the development of curricula that truly leverage the power of ePortfolios to transform learning in higher education is essential. For instance, the best initiatives incorporate folio thinking (reflection) into the ePortfolio design. We know that reflective practice is a learned ability. As such, intentional scaffolding of

reflective learning is needed in curricular designs utilizing ePortfolio. In addition, careful attention to where ePortfolio thinking and development is introduced and reinforced for proficiency in the wider lived experience of learners is needed. Yet it is also important to think beyond the traditional academic curriculum to include, and indeed bridge, the learning that happens in both academic and student affairs contexts. In other words, an integrative approach across the learning organization that

Fig. 2: Thyra Calvert’s ePortfolio in the Introduction Course is a good example of how learners were encouraged to think about themselves in the broader context of the SMF program. Source: Thyra Calvert.



engages the variety of stakeholders who are interested in the learning afforded by ePortfolio is needed.¹⁶

For instance, we integrated ePortfolios into the Sexuality, Marriage, and Family Studies (SMF) program where I taught previously as part of a larger curriculum redesign to ensure that our graduates met the learning outcomes for the program upon graduation. We realized that it was unrealistic to expect all faculty to use ePortfolios so planned for their introduction in a first-year course, to have them reinforced in a third-year milestone course, and for emerging proficiency to be demonstrated during the fourth year capstone course. In all instances, learners were encouraged to reflect on their learning and to make connections to learning that happened both in and outside of the classroom as they developed their abilities in the program. We observed the ways that our learners used the ePortfolio to consider and reconsider their ideas about sexuality and relationships and how these shifted and changed over time as they moved through our program.¹⁷ Indeed, the ePortfolio component became a signature initiative of the program. Most importantly, the ePortfolio made visible learning and connections that were previously hidden from the instructors and empowered the learners themselves to document their learning in ways that were meaningful to them while also meeting the program's learning outcomes. This intentional integration of ePortfolio, then, ensured that we were meeting our institutional outcomes, while also allowing our learners to develop their identities in relation to our program over time.

The SMF program is a good example of what Kathleen Blake Yancey calls thinking about the ePortfolio AS the curriculum.¹⁸ ePortfolios that are fully integrated provide learners and teachers opportunities to think like ePortfolio makers because it encourages consideration of the purpose of the ePortfolio. This idea builds on Yancey's earlier work that outlined the need to think about the delivered, lived and experienced curricula when we are designing ePortfolio implementations.¹⁹

We might take this one step further to the institutional level to address the needs and goals of all stakeholders through an integrated approach to ePortfolios. This would allow learners to develop their identities in light

of their experience of learning as individuals in that institutional context. How might this coherence affect the “evidence of experience”? I believe that we would begin to see true transformation of learning – our institutional missions and strategies would articulate an institutional identity through which learner portfolios could provide evidence of their individualized learning in that context. This could move us beyond a “check box” approach of learners to document that they meet a set of learning outcomes toward a more meaningful picture of the various ways that learners engage both academic and student affairs contexts to develop as learners and individuals. To be successful, designers of the learning process would, of course, need to think carefully about how learning in those different contexts is assessed and for what purpose. Shared conversations between academic and student affairs about what assessment means can create cohesive alignment between ePortfolio initiatives and the institution's mission, allowing us to move beyond scenarios where learners simply deposit evidence to earn their credentials

Assessment of learning should harness the “evidence of experience” in ways that document the learning that happens in classrooms for the purposes of a grade (often what learners in higher education focus on) but also makes space for documenting other types of learning that moves beyond simply “validating” that a learner has performed a certain task (i.e., that they performed 20 hours of community service). This requires that we begin to think of assessment in new ways – we need to consider how different types of evidence of learning from a variety of

Fig. 3: ePortfolio thinking within the curriculum



contexts can be used to support our institutional goals and mission. For example, a liberal arts institution may want different types of evidence than a community college and would design ePortfolio implementations that suit them. This also involves thinking about the different purposes assessment serves on a campus for learners and the institution itself: learners may need to produce evidence of learning in the form of grades to achieve a credential, to move into further study, or even for preparing for certain careers. Institutions need to provide evidence of learning to accrediting bodies, but also to the marketplace to demonstrate that graduates have developed the abilities necessary to be successful in their careers. A more intentional and comprehensive approach to capturing the diverse evidence of learning on a campus could help to address the added pressure today for complementary records of learning that provide a more complete picture of learning in the lived or experienced curriculum.²⁰

Thinking of assessment this way means that it “...does not just lie in the hands of faculty...we need to develop the ‘whole student’ by aligning curricular and co-curricular experiences with our institutional missions and learning outcomes.”²¹ Yet our institutions tend to operate in silos that make it difficult to offer coordinated and integrated approaches to learning that highlight the unique missions of our campuses. Making central the evidence of student learning from across the learning contexts on our campuses “...can help create synergies between functions and roles that often operate independently of one another.”²² Building on Bass and Eynon’s call for “rebundling” higher education by integrating the various elements of the digital learning ecosystem, I suggest that we apply the kind of integrative thinking that is found in the best ePortfolio curricula to the broader learning organization itself in order to foster new types of assessment practices, rooted in authentic evidence.

DESIGNING PATHWAYS FOR LEARNING

Today we need to find ways to privilege authentic learner evidence because our learners are diverse – they do not always come to us directly from high school as they once did. The “new majority” includes older and first-generation learners, many of whom pursue credentials while also engaged in work. These learners arrive with knowledge, skills, and abilities and ePortfolios provide them with opportunities to document and demonstrate

what they know, understand, and are able to do. This can be empowering for all learners because it communicates that the learning that happens in all contexts is valued. When we fail to recognize or value the diversity of experience in our learners and do not provide them with opportunities to document and reflect on what they know, we can create unintended inequities. For instance, we may privilege some learners and their experiences over others or set up situations where learners feel the need to conform to a particular standard, rather than articulate the learning as they experienced it. Instead, we can use ePortfolio practices to surface the “evidence of experience” of all of our learners and allow them to demonstrate to us who they are as learners that reflects our diverse student bodies. If we can pair the ePortfolio with traditional records of achievement to recognize this diversity of learning and apply integrated learning designs, we can begin to move toward more “open and integrative” learning experiences for all learners.²³ While many ePortfolio advocates recognize this and are taking steps to move toward developing systems on their campuses that are attuned to these needs it is clear that more work can be done.

RESEARCH AND INNOVATION IN PERSONAL PATHWAYS AND PORTFOLIOS FOR LEARNING (RIPPPL)

One effort to move toward a more systematic approach that engages multiple stakeholders in ePortfolio design and implementation is my current research with colleagues in British Columbia, Canada. Our work focuses on developing approaches to ePortfolio that make central the evidence of personal pathways across contexts and sectors (K-12 > Higher Education > Workplace/Community) so that we can set learners up for success as they develop the knowledge, skills and abilities that will allow them to be lifelong learners able to contribute meaningfully to 21st century society. Our goal is to design learning that meets the needs of stakeholders across sectors by focusing on knowledge practices that learners engage in and develop that can be transferred among sectors. One instantiation of this might be learners documenting their emerging capability with a set of knowledge practices in secondary school, further developing these practices within disciplines in higher education, and then transferring that knowledge to employment and community learning contexts upon graduation.

Central to this approach is the mobilization of knowledge in ePortfolio among sectors so that stakeholders share a common language and approach to learning development. As a start, we created an early prototype of one approach for privileging learners' unique and diverse experiences in the higher education sector aimed at capturing knowledge practices related to the university strategic priorities at Thompson Rivers University. We wanted to open up space for learners to chart their own pathways through their university careers that highlights the ways that they engage in knowledge practices and that represent some level of achievement of the campus strategic priorities, through curricular, co-curricular, and extra-curricular learning at a variety of developmental levels.

At the heart of the "Pathways for Learning" model is the idea that each learner brings with them knowledge, skills, and abilities from different learning sectors and in various stages of development that shape their learning experiences on our campus.²⁴ As such, the learners themselves have the ability to document where they are along their pathway, gain recognition for their learning at each stage of development (with both credits and non-credits), and plan for new learning opportunities. Making these pathways visible allows the institution to recognize the variety of learning experiences on the campus and provides evidence useful for guiding program redesign. This authentic evidence can also allow us to work with our partners in different sectors to explore concrete ways to transfer the knowledge between and among experiences of our learners to other opportunities. This type of work requires a more integrative approach to the design not only of programs of study, but also across the entire institution²⁴ and into the workplace and community. As noted above, stakeholders across the campus have their own "evidence of experience" and it is important to consider how ePortfolios can be of value in leveraging those experiences to provide more institutional coherence. Undoubtedly, these efforts will require more innovative and holistic models for comprehensive student (and institutional) records.²⁵

At the end of the day, work with ePortfolio practices and pedagogies should be focused on the ways that we can privilege and surface the variety of evidence that our unique learners bring to their learning. By providing them with opportunities to share and make visible their evidence of learning with us, we not only allow them to develop their unique identities, but also open up space for more

equitable learning opportunities for the diverse learners we encounter today. While this approach can create new possibilities for rethinking records of achievement, it more importantly represents a call to action for us all to ensure that we practice what we preach. We can begin to model, throughout our educational systems, the type of integrative approaches that ePortfolio enthusiasts advocate. This requires thoughtful and new approaches to managing the ways that we operate in higher education – we need to break out of our silos and work together more meaningfully and intentionally. Those of us on the front lines know that this is no easy task – but, our learners are our future and they are worth the effort.

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1 Trent Batson, "ePortfolios, Finally!" *Campus Technology*, 7 April 2010.; Penny Light, Tracy, Helen L. Chen, & John Ittelson, *Documenting Learning with ePortfolios: A Guide for College Instructors*, San Francisco: Jossey-Bass, 2011; Helen L. Chen & Tracy Penny Light, *Electronic Portfolios and Student Success: Effectiveness, Efficiency, and Learning*, Washington: AAC&U, 2010.

2 Mary Taylor Huber & Pat Hutchings, *Integrative Learning: Mapping the Terrain*, Washington: AAC&U, 2004; Candace Reynolds & Judith Patton, *Leveraging the Portfolio for Integrative Learning*, Sterling, VA: Stylus, 2014.

3 Randall Bass & Bret Eynon, *Open and Integrative: Designing Liberal Education for the New Digital Ecosystem*, Washington: AAC&U, 2016. On "unbundling" higher education, see Jeffrey J. Selingo, *College (Un)Bound: The Future of Higher Education and What It Means for Students*, Las Vegas: Amazon Publishing, 2015.

4 Ashley Kehoe, "Exploring the 'E,'" April 20, 2015. <https://sites.dartmouth.edu/ashleykehoe/exploring-the-e/>

5 Joan W. Scott, "The Evidence of Experience," *Critical Inquiry*, 17.4 (Summer, 1991): 773-797.

6 Helen L. Chen, Lisa H. Grocott & Ashley Kehoe, "Changing Records of Learning through Innovations in Pedagogy and Technology," *Educause Review*, Monday March 21, 2016 <http://er.educause.edu/articles/2016/3/changing-records-of-learning-through-innovations-in-pedagogy-and-technology>. In British Columbia, Canada, the Ministry of Education

Empowering learners with ePortfolios

TRACY PENNY LIGHT

is striving to redesign the BC Education Plan to create an education system that “better engages students in their own learning and that fosters the skills and competencies they will need to succeed. Central to this plan is the use of ePortfolios and the Ministry is currently engaging representatives from the higher education sector in discussion to ascertain how ePortfolios, as a primary means of student assessment and achievement, might be used in decisions about acceptance to college and university programs. This is prompting interesting discussions about the value of the traditional transcript and how the ePortfolios might better inform decisions about student mobility and transfer. More details about the new plan can be found at <http://bcdplan.ca>

7 Chen & Penny Light, *Electronic Portfolios and Student Success*; Penny Light, Chen & Ittelson, *Documenting Learning with ePortfolios*.

8 In the learning organization, we ought to think about all stakeholders as learners.

9 Scott, “The Evidence of Experience,” p. 776.

10 Ibid., p. 779.

11 One of the best examples of this that I have seen is the work by Susan Kahn at IUPUI in her capstone seminar in English. In that course, her students compose different versions of their life stories, reflect on the versions, and choose one to focus on in their ePortfolio. This work demonstrates how ePortfolio pedagogy can be used to support metacognition, integrative learning, and student engagement and agency. For a discussion of the role reflection plays in ePortfolio, see Cynthia M. Landis, Susan B. Scott and Susan Kahn, “Examining the Role of Reflection in ePortfolios: A Case Study,” *International Journal of ePortfolio*, 5.2 (2015): 107-121. See also Susan Kahn, “E-Portfolios: A Look at Where We’ve Been, Where We Are Now, and Where We’re (Possibly) Going,” *Peer Review*, 16.1 (Winter 2014) and the work of the Catalyst for Learning project <http://c2l.mcnrc.org>.

12 Buyarski, C.A., Aaron, R.W., Hansen, M.J., Hollingsworth, C.D., Johnson, C.A., Kahn, S., Landis, C.M., & Pederson, J.D. (2015). Purpose and pedagogy: A conceptual model for an ePortfolio. *Theory to Practice*, 54(4), pp. 283-291

13 David Eubanks & David Gliem. *Improving Teaching, Learning, and Assessment by Making Evidence of Achievement Transparent*, NILOA Occasional Paper #24, 2015, p. 3.

14 The “Formation by Design” project at Georgetown University considers how the university of the future could be designed with learners at the center to address some of the forces transforming higher education. The project is exploring a number of high impact practices to meet its goals <http://futures.georgetown.edu>. Other universities are explicitly exploring the ways that ePortfolios can be used to shape learner identities. For instance, see the ePortfolio program at Loyola University where students are encouraged to develop their digital identities as a “holistic representation of who you are, personally, professionally, and academically” http://luc.edu/experiential/ePortfolio/ePortfolio_Pedagogy.shtml. At the University of Central Oklahoma, the Student Transformative Learning Record (STLR) is being implemented to help students to document the ways that they “grow and transform through both academic and non-academic experiences while at the University of Central Oklahoma (UCO).” <http://UCO.edu/central/to/STLR/>, and the University at Buffalo has redesigned their General Education curriculum to incorporate ePortfolios to allow students to make connections across their learning and to enable them to prepare for “life, career and citizenship in a diverse and dynamic world” <http://Buffalo.edu/us curriculum/overview.html>.

15 Celeste Knowles Nguyen, “The ePortfolio as a Living Portal: A Medium for Student Learning, Identity, and Assessment,” *International Journal of ePortfolio*, 3, 2 (2013), p. 135. Other authors have written about identity development and ePortfolios. For instance, see Kathleen Blake Yancey, “Reflection and electronic portfolios: Inventing the self and reinventing the university. In D. Cambridge, B. Cambridge, & K. Yancey, (Eds.), *Electronic portfolios 2.0* (pp. 5-16). Sterling, VA: Stylus, p. 5-16; Helen Barrett, *REAL ePortfolio academy for K- 12 teachers*. Retrieved from <http://electronicportfolios.com/academy/index.html>; Darren Cambridge, *ePortfolios for lifelong learning and assessment*. San Francisco, CA: Jossey-Bass, 2010. On learners and self-authorship, see Marcia Baxter-Magolda, “Self authorship as the common goal of 21st century education,” in M. Baxter Magolda & P. King (eds.), *Learning Partnerships: Theory and Models of Practice to Educate for Self-Authorship*, Sterling, VA: Stylus, 2004: 1-36.

16 Penny Light, Chen & Ittelson, *Documenting Learning with ePortfolios*, p. 27

17 For a further discussion of the capstone course, see Caron De Santis and Toni Serafini, “Classroom to Community: Reflections on Experiential Learning and Socially Just Citizenship” in Tracy Penny Light, Jane Nicholas & Renee Bondy (Eds) *Feminist Pedagogy in Higher Education: Critical Theory & Practice*, Waterloo: WLUP, 2015:87-112.

18 Kathleen Blake Yancey, “What ePortfolios Have to Teach (all of) Us: A Practice of Curation, an Invisible Curriculum, and Cataloguing-as-Assessment,” AAEEBL Annual Conference, August 2016.

19 Kathleen Blake Yancey, *Reflection and the Writing Classroom*, Logan, UT: Utah State University Press, 1998.

20 Chen, Grocott & Kehoe, “Changing Records of Learning.”

21 Platt, S. & S. Sayegh, “Student Learning Outcomes Alignment through Academic and Student Affairs Partnerships,” NILOA, 2015. <https://illinois.edu/blog/view/915/265459>

22 George Kuh, Stanley O. Ikenberry, Natasha A. Jankowski, Timothy Reese Cain, Peter T. Ewell, Pat Hutchings & Jillian Kinzie, *Using Evidence of Student Learning to Improve Higher Education*, San Francisco: Jossey-Bass, 2015, p. 197.

23 Bass & Eynon, *Open and Integrative*.

24 <http://www.tru.ca/learning/students/pathways-students.html>

25 Bass & Eynon, p.7.

26 Chen, Grocott & Kehoe. The collaborative work between AACRAO and NASPA to develop a diverse set of models for institutions wishing to implement a comprehensive student record holds promise for this thinking <http://www.aacrao.org/resources/record>. Other institutions are exploring the ways that digital badges can provide different types of records of learning and how these might be paired with ePortfolios. One such example can be found at Notre Dame University <http://ePortfolio.nd.edu>

An interactive ePortfolio enhances student learning

by JIA-LIN YANG

edited by ELLEN ZEMAN

Science is a difficult subject for most students, who believe it involves learning dense theories and abstract concepts rather than being about a method or process of inquiry. I created and delivered a 'scientist-based', integrative professional, career and ePortfolio learning (IPCEL) curriculum for senior undergraduate students in a Cancer Sciences (PATH3208) course. This innovative approach gives students an 'apprenticeship' or 'internship' in becoming scientists. I initiated and led my colleagues to create three models to encourage students to think and act like scientists to become a professional or scientific inquirer in the field. The first is an ISA model, in which students see their 'image' of a potential scientist, are voluntarily performing 'self-directed learning' to purposefully improve their knowledge base and skills, and undergo 'self-assessment and adjustment' during their learning process. The second is a comprehensive learning model that demonstrates the correlation and interaction across the disciplines of professional, career and ePortfolio learning. The third is a synergistic eportfolio, professional and career learning model that demonstrates how the interactive eportfolio enhance student professional and career development learning in the IPCEL. Through this students understand how personal ePortfolios can

synergise their learning, enabling them to confidently take the step to give it a go. The distinctively interactive ePortfolio is designed to help students identify clear personal career goals, record and reflect on their fortnightly learning both on and off campus, and analyse their strengths and weaknesses in real world based research activities. This helps students to expand their knowledge base, and adjust beliefs and behaviours, to build an understanding of and a disposition towards the vocation of a scientist. The ePortfolio provides a useful means for students to personalise their credentials, and customise their professional presentations and digital identity. It also targets students' life-long and life-wide learning. Students write regularly in their ePortfolio, to which I give periodic and final feedback. I mark a student ePortfolio and final summary using an integrative learning value rubric (AAC&U), which accounts for 5% of the final course mark. Students can copy their ePortfolio to an external free website for future learning and reflection. They can also adjust their career goals at any time reflecting on their experience and feedback. The effectiveness of my interactive ePortfolio approach is verified by 100% student participation and high quality learning records and reflection, as well as by peer

recognition as an exemplar through the UNSW Faculty of Medicine's Teaching Technology Toolkit.

INTRODUCTION

From my previous experience, I know that science is a difficult subject for most students, who believe it involves learning dense theories and abstract concepts rather than being about a method or process of inquiry. They are also often unsure about what 'to do' with a science degree. They seemed to worry more about their future job and career:

'Not sure about how to find a job with a science degree. Although I will be doing postgraduate study, I'd still like to know where a science degree can take you without honours/PhD. What career program is available for these that take this option? (Student, 2011)'

Students are increasingly aware of the competition they face for highly sought-after graduate jobs, and the pitfalls of relying solely on the nature and quality of their academic qualifications in securing that employment. This awareness naturally leads to concerns regarding how they may best package their credentials and skills in ways that conveys their value to future employers (Tomlinson 2008, 59).

From educators' perspective, those who supervise students talk about the need for students to become independent researchers. I believe that being an independent researcher in science is not solely determined by an academic qualification. Other qualities are important, including constructing disciplinary knowledge in its interdisciplinary context, effective communication and collaborative learning, curiosity, an inquiring mind, self-directed learning, critical thinking, problem solving, reflection and personal presentation. In addition to my own reflections as a previously research-only academic, these considerations led me to change my educational approach from 'a standard science learning' to an emphasis on 'learning as a scientist'.

In addition we are at the age when digital revolution has changed learning in terms of centre, location, time, and strategy, a student learning happens everywhere and all the time. Therefore, it is a trend to apply electronic

portfolio in different education contexts. An eportfolio is a digital archive that represents a student's work over time through a broad range of artefacts (Georgetown ePortfolio Initiative, 2001). It is a collection of electronic evidence assembled and managed by a user (Zimmerman, 2012). Such evidence may be demonstrations, resources and/or accomplishments in input text, blog entries, electronic files, images, multimedia, and hyperlinks, etc. Eportfolios are both demonstrations of the user's abilities and platforms for self-expression. It is possible for users to maintain eportfolios dynamically over time. In education, eportfolio application can be classified as three types: student eportfolios, teaching eportfolios and institutional eportfolios (Lorenzo and Ittelson, 2005). A student eportfolio in my Cancer Sciences (PATH3208) course is a student-centered, student-owned and managed collection of digital resources that include examples of formal and informal learning activities from the course, these artefacts have been designed and developed to facilitate reflection, and provide evidence of a student's learning in this course (Yang et al, 2015). Therefore, we believe that eportfolios have significance not only within but also beyond classroom practices. As Batson described (2015) that portfolios work in at least four contexts: learning (inquiry, reflection, integration), assessment, technology, and culture (personalized learning).

The aim of this article is to introduce how an interactive eportfolio synergises student 'scientist-based', integrative professional, and career development learning (IPCEL) in a 3rd year undergraduate Cancer Sciences course at UNSW Australia.

THE 'SCIENTIST-BASED', INTEGRATIVE PROFESSIONAL, CAREER AND EPORTFOLIO LEARNING (IPCEL) CURRICULUM

After identification of student needs, I designed the 'scientist-based', IPCEL curriculum in 2012 (Yang et al, 2013, 2014, 2015a and b), with the support of Professor Nicholas Hawkins, who was the Head of School of Medical Sciences. Since then I have served as the course convenor to deliver the IPCEL for 3rd year science students of the PATH3208 course. As the Faculty uses a team-based approach, there are 29 other course staff members who are guest lecturers, small group tutors and site instructors for co-curricular classes. I also served as a teacher in

PATH3208 and five other undergraduate courses for lectures and/or whole-class tutorials on eportfolio and career development, and for small group tutorials. I also lead the program-wide IPCEL research for five undergraduate courses (Yang et al, 2016).

I use the term ‘scientist-based’ to represent an outcome-based, authentic and integrative learning approach and designed the IPCEL intervention around six broad areas (Figure 1) for PATH3208, focusing on integrating professional knowledge and skills, career awareness and employability and eportfolio learning in the real world.

Specifically, incorporating eportfolio into the IPCEL with the aim of using eportfolio learning to integrate and enhance student’s professional and career development. The IPCEL curriculum, particularly the addition of career development and ePortfolio learning in a scientist-based professional learning, have a great impact on building a student’s personal credentials and capabilities. This

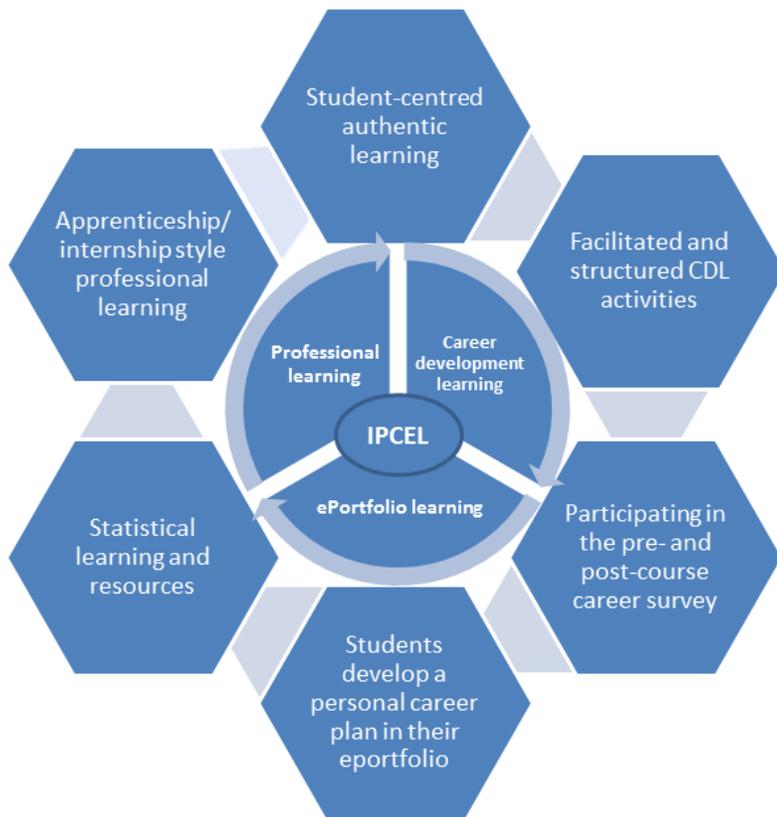
innovative approach gives students an ‘apprenticeship’ and ‘internship’ in becoming scientists.

ENGAGING STUDENTS IN AND MAKE MOST OF EPORTFOLIO LEARNING

Incorporating eportfolio learning in the IPCEL curriculum doesn’t guarantee a student’s participation and success for enhancing professional and career development learning in the cancer sciences course. As Batson (2002) indicated previously:

“Despite a general recognition of the usefulness of an eportfolio, the key to success is how well the campus population is prepared for using this new tool. It’s not a simple add-on to existing courses; if it is, students may not see the value. Indeed, if eportfolio tools become just a simpler way to log student work, we’ve missed the boat.”

Figure 1. A ‘scientist-based’, integrative professional, career and ePortfolio learning (IPCEL) curriculum.



In order to improve student awareness of the values of eportfolio, reflective writing skills and compiling evidence of career achievement, as along with use of an eportfolio software, I run a whole class eportfolio tutorial at the beginning of the course. This tutorial introduces theories, advantages and examples of student eportfolios and how we will assess them. Specifically, at the end of the tutorial students will be able to understand the definition of eportfolio (a digital archive), know the functions (collect, select, reflect, present, and curate) and benefits (self-directed learning, cognitive learning, integrative learning, transferring to long-term memory, life-long and life wide learning, career development learning, metacognition, self-regulation, management of time as well as physical and social environment, and alternative and authentic assessment), know techniques (establish eportfolios at personal forum of the PATH3208 course site or at other site, control, update, reflect and/or share their eportfolios), use eportfolios for presenting and reflecting their learning anywhere at any time, use eportfolios as resources for assignment of tailored cover letter and resume, and understand eportfolio

assessment criteria and submission requirement (a summary plus regular reflections). In addition, two eportfolio-associated learning models were created to make students think intentionally, as well as motivate and guide student professional learning and reflection.

OUR SELF-CREATED EPORTFOLIO-ASSOCIATED LEARNING MODELS

I initiated and led my colleagues to create three learning models that provide pedagogical support for the IPCEL and encourage students to think and act like scientists. Through these students understand how personal eportfolios can synergise professional and career development learning through intentional inquiry, integration and reflection, enabling them to confidently take the step to give it a go.

The first is an ISA model (Figure 2), in which students see their ‘image’ of a potential professional specialist (e.g. a scientist), are voluntarily performing ‘self-directed learning’ to purposively improve knowledge base and skills, and make ‘self-assessment and adjustment’ during their learning process.

The ISA model describes students’ learning at the current time, in which:

They can see their images of their own potential career, carry out a self-directed learning journey to pursue their career goals, and take assessment and adjustment of their studies and get the most from them. The image shows professional and career goals and integrative learning tasks for obtaining knowledge, skills and capabilities to achieve goals. The self-directed learning is a life-long and life-wide process since career goals may be changed in levels and/or directions due to personal or socioeconomic reasons (Blustein et al, 1997). The assessment and feedback from self, peer or academic will frequently stimulate reflection and modification for appropriate personal learning (Figure 2).

Fig. 2: ISA model. Sources: Yang and Azouz, 2015; Yang et al, 2016.



Fig. 3: A comprehensive DOTS, CDMSE and ePortfolio learning model. Sources: Coleman et al, 2012; Yang et al, 2013, 2014, 2015 a and b.



The second is a comprehensive DOTS, CDMSE and ePortfolio learning model (Figure 3) that demonstrates the correlation and interaction across the disciplines of professional, career and ePortfolio learning and promote students' intentional inquiry, integration and reflection in the IPCEL.

IN THIS MODEL:

Effective career learning is composed of a dynamic relationship between self, opportunities, decisions and transitions (DOTS model, Watts, 2006). Self-beliefs about career decision-making have been operationally defined using the concept of the Career Decision-Making Self-Efficacy (CDMSE; Taylor and Betz, 1983), which highlights five relevant behaviours well matched with the DOTS model: self-appraisal, gathering occupational information, goal selection, planning and problem solving. Professional learning is part of the IPCEL and focuses on cancer research specific knowledge and skills, career awareness and employability learning. The IPCEL is a lifelong learning that is a "purposeful learning activity undertaken in an ongoing way with the aim of improving knowledge, skills and competence" (Commission of European Communities, 2000) and thus it should be classified as a self-directed and reflective learning. The importance of reflective learning was well described in King and Kitchener's reflective judgement model (1994). They reported that students can transit from various stages of reflective practice. An individuals' understanding of the nature, limits, and certainty of knowing, which means their epistemic assumptions and how these may influence them in which they defend their judgments over time. The reflective judgment conceptual framework is characterized by seven distinct but developmentally related sets of assumptions about the process of knowing (view of knowledge) and how it is acquired (justification of beliefs). Each successive set of epistemological assumptions is characterized by a more complex and effective form of justification. The seven developmental stages range from lower to higher order reflective thinking (King and Kitchener, 2002). Within the context of higher education, eportfolios provide students with the opportunity to become owners of their learning as they collect, select, reflect, present and curate their artefacts and evidence for assessment (Allen and Coleman, 2011). They also represent a useful vehicle for reflective practice – the process by which a student can transform experience into learning (Brookfield, 1995). Since effective IPCEL requires the student to undertake

self-assessment and perform an appraisal of the context of their discipline, the IPCEL lends itself to learning and teaching methods that require reflection (McIlveen et al, 2011). The capacity of eportfolios to support reflection and selection makes their use a logical 'best fit' tool for improving skills needed for graduate recruitment (Leece, 2005).

The 3rd is a Synergistic ePortfolio, Professional and Career (SEPC) learning model (Figure 4) that demonstrates how the interactive eportfolio enhance students' professional and career development learning in the IPCEL.

In this model, students under facilitation of a facilitator (a course convenor, an academic, a tutor or a peer) use interactive eportfolios to enhance their personalised professional and career development learning. Through intentional inquiry based on personal analysis of strengths and weaknesses via a student eportfolio, students acquire career goals, specific knowledge, skills and experience in learning activities within or off campus one by one. These separate learning components are put together or further integrated in eportfolios to form networks, frameworks, structures or images. The synthesised assumptions of knowledge, conceptual framework or structure or image are judged through personal reflection(s) and reacquired and justified at higher level. Social contact such as teamwork or organisational or community activities can improve learning and reflection. Formal or informal assessment has direct impact on justification of previous beliefs. The interactive eportfolios, in which a student undergoes regular intentional inquiry, integration and reflection and receives periodic feedback from a facilitator, provide extra opportunities for students to justify their beliefs from any aspects, anywhere and anytime. If performing well, this interactive eportfolio learning approach will synergise students' professional and career development learning.

INTERACTIVE EPORTFOLIO

I set up an eportfolio site using the Moodle Learning Management System (Moodle™ Version 2.0-2.9, Moodle Pty Ltd, Perth, WA, Australia), as both a personal and interactive forum for students to contribute to their 8 personal eportfolios fortnightly and receive periodic feedback from me, the course convenor.

The distinctively interactive aspects of the ePortfolio such as formal and informal assessment, answers, suggestions, discussions, compliments and encouragement are designed to help students identify clear personal career goals, record and reflect on their fortnight learning both on and off campus, analyse their strengths and weaknesses in real research activities. This builds understanding of and a disposition towards the vocation of a scientist. The ePortfolio provides a useful means for students to intentionally inquiry, integrate and reflect on IPCEL, personalise their credentials, and customise their professional presentations and digital identity.

I invite them to think and act like scientists and become a professional or scientific inquirer in the field through learning scientific concepts and techniques. I place students from the outset in the position of a scientist in the real world physically and mentally. When students see how exciting it is to be a scientist, the hard work of learning forms part of their vocation, and leads to careers in science. In addition, I place particular importance on the position of scientists as collaborators in collective inquiry into the world and make sure students experience this

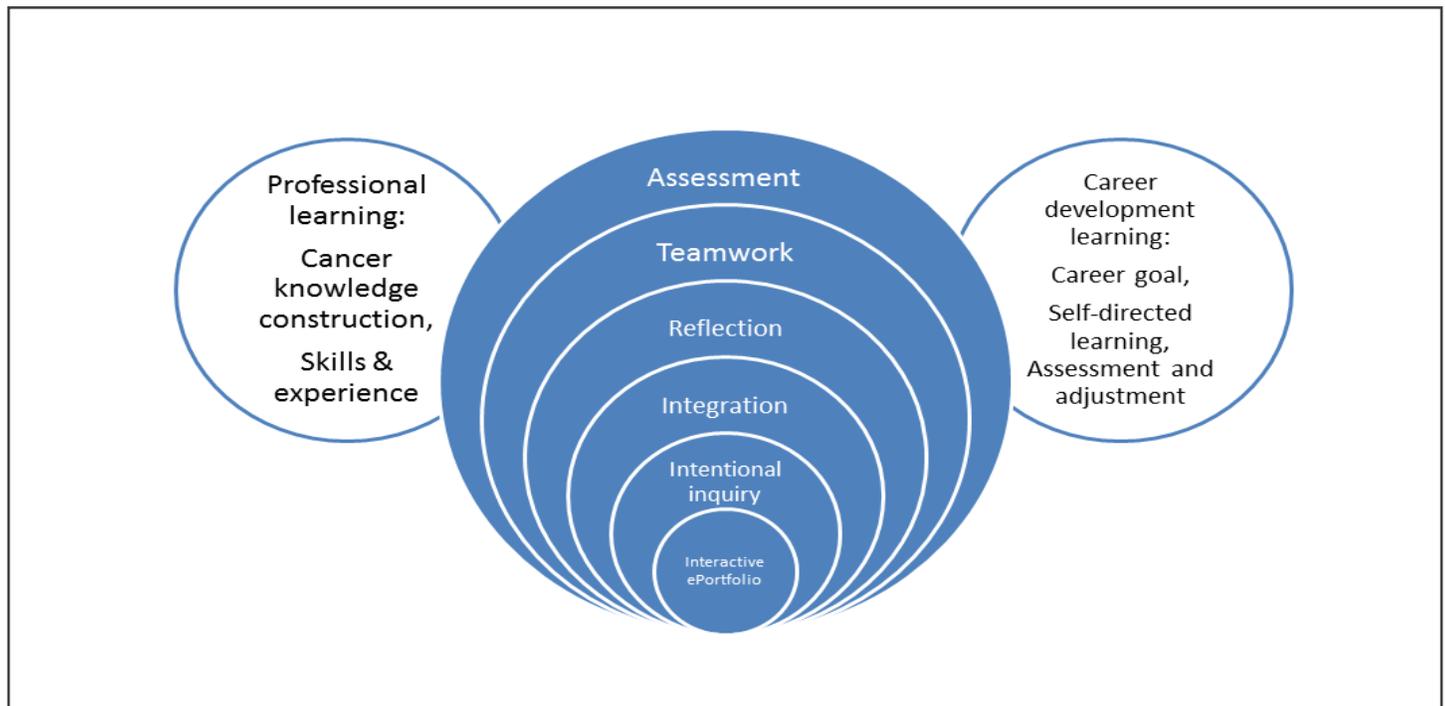
through collaboration with other learners. This in turn means that their engagement, confidence, satisfaction and quality of outcomes are higher.

EPORTFOLIO EXAMPLES IN IPCEL PRACTICE

1. INTERACTIVE EPORTFOLIO TO IMPROVE STUDENT-CENTRED AUTHENTIC IPCEL:

I believe that a traditional degree offered by an institute does not differentiate students from each other. Through an interactive ePortfolio, I encourage students in undergraduate courses to record and reflect on their integrative professional and career development learning, both on and off campus. An ePortfolio is a personal website collection and provides a useful means for students to personalise their credentials, and customise their professional presentations and digital identity. For this purpose, I developed the interactive ePortfolio that targets students' life-long and life-wide learning. Students write fortnightly in their ePortfolios, to which I give periodic and final feedback to show my respect, give positive evaluation, provide answers or suggestions, and encourage

Fig. 4: a SEPC learning model.



students to practice and improve their reasoning skills. I mark a student ePortfolio and final summary using an integrative learning value rubric (AAC&U), which accounts for 5% of the final course mark. Students can copy their ePortfolio to an external free website for future learning and reflection. They can also adjust their career goals at any time reflecting on their experience and feedback. I find my prompt feedback is a positive reinforcement for student ePortfolio learning. I also receive student feedback on course activities for further course development through this method.

A student commented:

'The statement A/Prof Yang highlighted in my first reflection, "In order to truly evolve within the course, you need to go beyond what it taught to how it can influence and impact future learning and career options and opportunities," is exactly what this course has been about and I am truly grateful for the self-development opportunities that it has provided.'

Another said:

'In the future, I will be able to apply these skills, which will require proper communication skills as well as critical thinking for diagnosis and treatment. I honestly feel that this course has improved many aspects of knowledge and thinking and I look forward towards research and medicine in the future' (Student, 2014).

2. FACILITATED AND STRUCTURED CAREER DEVELOPMENT LEARNING ACTIVITIES:

I developed specific career tutorials through the ePortfolio for students to learn about career opportunities, job-search strategies, goal setting, personal achievement recording, resume writing and interview techniques. Students thereby gain a clear image of a scientist and are confident and prepared for employment:

'This tutorial based on the resume and cover letter task was very helpful for the future, as we learnt how to stand out from other applicants that are applying for the same job. By providing us with situation examples, A/Prof Yang guided us on what employers look for in a potential employee and how to succeed in answering interview questions. This was valuable knowledge that I will use to help me get a job' (Student, 2012).

3. 'APPRENTICESHIP' AND 'INTERNSHIP' STYLE PROFESSIONAL KNOWLEDGE AND SKILLS LEARNING:

Often science graduates are criticised for their lack of ability in doing independent research. I use an authentic learning approach to enable students to learn science from the real world. 'To do as a scientist does' exposes students early in an apprenticeship/internship learning stage, which is critical for building independent research ability. I designed the curriculum and co-curriculum activities, in which students, like a scientist, construct cancer-specific knowledge through these activities, building upon previously obtained general knowledge to form a schema or brain knowledge network. Students work together to review current literature and identify a valid cancer research question in a group and through collaborative learning, they design their project with hypotheses/aims, methods and expected outcomes. Students then present, assess and discuss their project with peers and write a literature review and project report. Through this approach, students develop personal and team skills as well as leadership skills and understand the importance of collaboration:

'I really think that this course has taught me a lot and not just in terms of theory. It has prepared me for the possibility of being a scientist. I am, without a doubt, excited to take this next step forward.'

'Group work, I have come to discover, is a lot about communication and patience. This has allowed me to come to an understanding of the significance of collaborative work – not only in working together to achieve something great, but also allowing other people to enrich my understanding and help me to develop a wider, more holistic approach to a problem or situation' (Student, 2015).

4. ASSESSMENT AS LEARNING ENHANCING IPCEL:

I place particular importance on the position of scientists as collaborators in collective inquiry into the world. I nurture the curiosity of students, and unlike much traditional teaching in the STEM (science, technology, engineering and mathematics) field, I encourage questioning and scepticism from student-scientists. In acting like scientists, students participate in assessment, from individual critical analysis of a published scientific research article to marking as collaborative peer assessors of group project design presentation. This

experience as both learner and assessor improves student reflective learning and comprehension.

Students commented:

‘One of the skills I had learnt from my first tutorial was to critically analyse a scientific research paper. In my other courses, we were not really exposed on how we analyse a paper and I’m thankful that I have grasped this vital skill’, and ‘It’s good to watch and evaluate other people’s presentation because not only do you learn the diversity of studies but you also have an opportunity to observe the strengths and weaknesses of a group presentation skills as well as their project’ (2013).

5. SELF-EFFICACY SURVEYS TO IMPROVE CAREER AWARENESS AND EVALUATION OF IPCEL:

Embedding research in learning and teaching (L&T) provides a better understanding of the effectiveness of learning activities. I adapted the international standard Career decision making and self-efficacy (CDMSE) survey as a valid and highly reliable instrument to measure student confidence in career development education. Measuring confidence in all aspects of career development is better than assessing employment as the latter is affected by complex factors (e.g. social and economic factors) beyond students’ control. The well-correlation across goals of professional, career and ePortfolio learning (Yang et al. 2015a) supports use of this survey for evaluation of the IPCEL.

Our studies indicate that IPCEL can significantly improve career-associated self-efficacy in all students including young women in science. In a 2012 pilot study, PATH3208 students were much more confident in 4/5 aspects of self-efficacy, including self-appraisal, obtaining occupational information, planning and problem solving from pre- to post- IPCEL intervention (Yang et al, 2015a). This learning approach was further tested in five senior science courses, with four courses receiving IPCEL and the other a previous L&T approach. I observed significant improvement in students’ self-efficacy within the four IPCEL courses, but not in the non-IPCEL course, indicating that the significant gain in student self-efficacy was a specific benefit of IPCEL, for both female and male students (Yang et al, 2016).

6. AUTHENTIC STATISTICS LEARNING ENHANCING IPCEL:

Statistical learning is thought of as ‘boring’ by many science students, although integral to their professional and career development. I created statistics-associated resources that bridge statistical theories and practice, enhancing student personalised statistics learning and problem solving. These included self-created easy statistics videos through Camtasia to deliver knowledge on research errors, biases and how to avoid them in project design, combined with quizzes pre- and post-video watching. I invented ‘stats-choice tree’ and pioneered e-STATS-CHOICE software (Yang, 2014; Yang and Azouz, 2015) for assisting students in problem solving in computer laboratories, on scenario-based or real research projects for selection of correct statistical methods for analysis based on hypotheses and data types. These resources improved students’ statistics knowledge and skills learning. Students who used these resources achieved better examination outcomes than those who exposed in traditional learning. My Camtasia videos are also an exemplar of the UNSW Faculty of Medicine’s Teaching Technology Toolkit. A student mentioned in personal eportfolio:

‘The e-learning website has been tremendously helpful in not just cancer sciences but also my other courses such as neurophysiology. I am extremely happy with my progress of understanding in statistics. I am absolutely certain that statistics will definitely be crucial for me to be successful in my chosen career path and so, I look forward to further developing my knowledge of statistics’ (2015).

OUTCOME

The consequence of the IPCEL approach on students by the end of the course is a high proportion of them get into postgraduate research studies, of whom over half are female, because the students have been motivated as evident by high academic performance, high satisfaction and high self-efficacy in a pilot course as well as in a science program-wide study (Yang et al, 2015a, 2016). Students’ achievements under the IPCEL curriculum have led to invitations for me to present at university-wide events including connections seminars, L&T Annual Forums and international L&T conferences. My approach

is also recognised in grants, awards and publications, including a Seed Fund from L&T unit, a teaching award in my Faculty and many relevant first author publications. Colleagues identify the ePortfolio and Camtasia video work as exemplars in the Faculty’s Teaching Toolkit (teachingtools.med.unsw.edu.au). International peers invite my participation in world ePortfolio leadership activities.

The effectiveness of my interactive ePortfolio approach is verified by 100% student participation and high quality learning records and reflection, as well as by peer recognition as an exemplar through the UNSW Faculty of Medicine’s Teaching Technology Toolkit. The PATH3208 course consistently gets very positive student feedback as shown in the Independent Course and Teaching Evaluation and Improvement (CATEI) mean scores (Student’s satisfaction is recorded on a scale of 1 to 6; Table 1), in which my teaching sections (*) are particularly highly rated.

In addition students comment very positively about how the course helps them to think like a scientist. One noted in personal eportfolio:

‘This course was unique. It’s not just about the theory of cancer itself, but it’s applications in the real world, that this course does not just teach you what a cancer cell does, but it teaches you how it can be treated, what techniques can be treated, what is used to treat it, the processes to make the treatment, etc. It also teaches you about where we as a budding scientist come into all this’ (Student, 2013).

Another wrote:

‘This course has given me an insight of what it would be like to be a scientist. It has taught me valuable skills that I will need for Honours and most importantly for my career. I do intend to embark upon my goal and this course has made me believe that I can do it. I just need to work harder and I will’ (Student, 2015).

And feedback from a graduate with average performance in my course indicates a high research potential:

‘As a result of the PATH3208 course, I chose to undertake an Honours year at the University of Technology, Sydney after talks with a supervisor I had previously known. Although I was only an average student, I found the skills provided within the course extremely advantageous and greatly assisted me in getting a first class honours. Additionally, I have also been able to get my name on two first author publications (Manuscripts in review) as well as obtain an APA (Australian Postgraduate Award) scholarship for supporting my PhD study.’

International ePortfolio specialist feedback on my course design and IPCEL at the manuscript-peer-review noted:

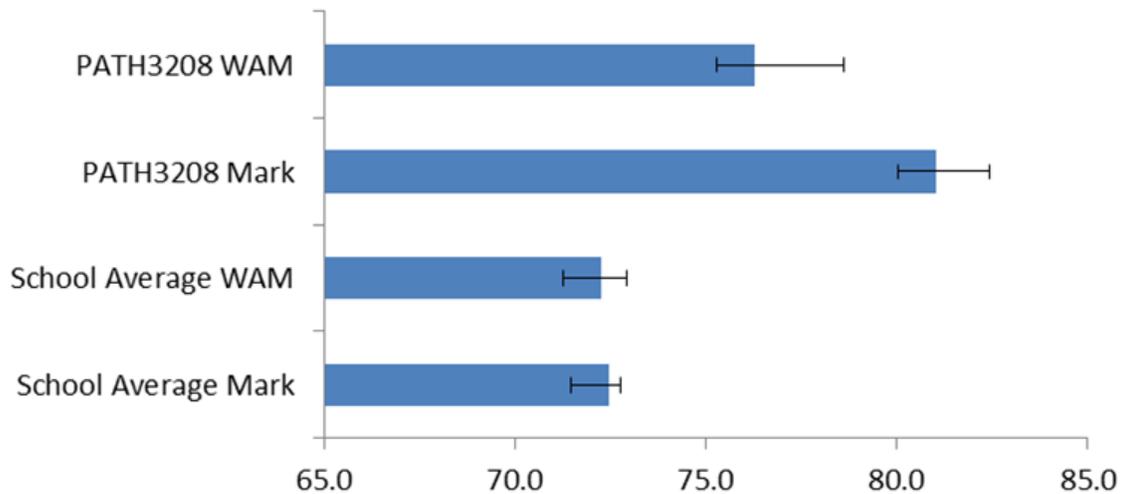
‘The proposed study would be a welcome addition to international ePortfolio studies in that it would extend the disciplinary foci and include an international perspective that has a general focus in Australia. This is a promising design that contributes to a much-needed area of ePortfolio research, how ePortfolios can improve students’ self-directed learning towards their career aspirations’ (ePortfolio Specialist, 2013).

The overall impact of the IPCEL on student learning in

Table 1. 2012 Results of Career Decision-Making Self-Efficacy Survey. Source: Yang et al. 2015b.

	Self-appraisal		Occupation information		Goal selection		Planning		Problem solving	
	Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-
Time to course										
Mean score	18.1	19.8	15.9	18.2	18.4	18.8	17.0	19.2	17.1	18.3
SD	3.1	2.6	2.8	3.1	3.1	2.6	2.9	3.1	3.0	2.5
P 2-tailed	0.014		0.001		0.507		0.002		0.016	

Fig. 5: Average 3rd year science school mark versus that of the PATH3208 for the last 4 session II semesters. A significant difference (all $p < 0.01$) was observed between PATH3208 WAM and School average WAM, as well as between PATH3208 Mark and School average mark (both independent Student's t-test and Mann-Whitney test were used in analysis).



the PATH3208 course is evident in very high academic performance in the science program, with significantly higher course mark and weighted average mark (WAM) than 3rd year school average mark and WAM (Figure 5).

The average course mark is higher than the entry threshold of postgraduate courses, and so PATH3208 students continued their studies in high proportions: 44% honours, 12% Masters, 5% PhDs, 10% Medicine. As noted above, we achieved high levels of young women continuing their research (51% vs 47% school honours female rate).

The IPCEL was awarded a Seed Fund by the UNSW L&T unit in 2012. The value of the IPCEL approach has been recognised by my colleagues in sciences. I led the program-wide application of IPCEL in the UNSW School of Medical Sciences in 2013, achieving outstanding results (Yang et al, 2016), and It has now been successfully extended from pathology to pharmacology, anatomy, neurophysiology and exercise physiology, over at least five other courses. In 2015, I received an Award for Outstanding Contributions to Student Learning from the UNSW Faculty of Medicine. My leadership in the ePortfolio field is recognised both across the UNSW campus and more broadly. Deakin University has used my approach successfully. I am a member of the organisation committee of the 2016 International Conference of ePortfolio, Boston and a

coinvestigator of an international collaborative project: the Field Guide to ePortfolio involving the Association for Authentic, Experiential and Evidence-Based Learning, the Association of American Colleges and Universities, the International Journal of ePortfolio, and Electronic Portfolio Action & Communication. I also represented UNSW in the 2013 and 2016 Boston ePortfolio Board Summit and presented at various conferences on my ePortfolio studies. As an expert in ePortfolio and career development learning, I have served as an associate editor of the International Journal of Adult, Community and Professional Learning and International Journal of Science, Mathematics and Technology Learning.

CONCLUSION

This article for the first time described comprehensively the 'scientist-based', integrative professional, and career development learning (IPCEL) curriculum, the learning models behind this approach, IPCEL trial and outcome, focussing on how the interactive eportfolio impacts student IPCEL. The experience gained from trialling the models in the Cancer Sciences (PATH3208) course detailed in this article supports the application of the IPCEL for senior science students to develop a scientific approach as well

as vocational skills in a real world setting. In addition the application of the interactive eportfolio in the IPCEL can synergise student professional and career development learning through additional intentional inquiry based on personal learning needs, integration across curricular and co-curricular learning and reflection from personal and collaborative learning activities within and off campus.

Future studies are warranted to improve eportfolio assessment in terms of optimal proportion contributed to the final course mark, as well as personalising student credentials and customising their professional presentations and digital identity. This effort requires acceptance and recognition by institutions and organisations. When all stakeholders, including students, educators and administrators at schools, faculties and institutions are willing to participate in eportfolio practice, we will see another learning 'Renaissance'.

ACKNOWLEDGEMENT

I would like to thank Mita Das, Nicholas Hawkins and all other Cancer Sciences course staff for their support and assistance in course delivery, Kathryn Coleman and Lila Azouz in assistance in searching theories and/or image design for the learning models, and Kristin Turnbull, Niki Fardouly, Fiona Thurn and Blinda Allen for technical support on Moodle system. I would also like to thank all PATH3208 students for active participation in IPCEL and sharing their eportfolios. Finally, I gratefully acknowledge Jan McLean, Helen Pringle and Diane Bradley for providing amendment advice for the manuscript.

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Using ePortfolios instead of an LMS:

A model to promote lifelong learning and professional development

by ERIC MACHAN HOWD

edited by CARRA HOOD

“Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn’t really do it, they just saw something. It seemed obvious to them after a while. That’s because they were able to connect experiences they’ve had and synthesize new things.” – Steve Jobs

I have used various course management systems (CMS) throughout my career as a professor, but I was always concerned about the closed-nature of these systems. My learners saw their work in the CMS more as something for me, rather than a place for themselves, a place where they could showcase their work, their skills and their competencies, and to look at their growth from more of a distance.

Course management systems were created primarily from an instructor-centered view. In their infancy, most CMSs contained features that made it easier for the instructor to communicate with their learners, obtain electronic submissions of homework, and to assess the knowledge of their learners through electronic quizzes, tests, and questionnaires. These characteristics naturally

tilted the purpose of the CMS toward the instructor; the learner, in turn, used these systems to meet the needs of the instructor.

In sharing this article, I challenge you to rethink the CMS as more of an LMS, a Life Management System, a system that is more student centered and applicable to lifelong learning and reflection. In illustrating this model of using an ePortfolio instead of your standard course management system (ex. Blackboard, Sakai, Moodle, Desire to Learn, etc.), I’d like you to keep in mind the changing characteristics of today’s learner, who comes to our institutes of higher learning looking to apply their education to real-life situations, not only to obtain a passing grade, but to prepare themselves for their future education and careers. These learners have grown up with

the Khan Academy, learning from the Internet and social networks, and active, engaging, classrooms. They see value in how learning applies to their lives and careers.

A CONCRETE EXAMPLE

The following example is how I have designed a basic Business Communications course to promote reflection, self-identified artifacts, professional development and lifelong learning, through the Digication ePortfolio platform. All of the coursework and discussion were completed without the use of a traditional CMS and, instead, were completed through the individual student's eportfolio. Keeping the learner's content private was an important aspect of this model and the use of Digication, and its permissions-based viewing features, allowed the learner to control who, in the class and outside of the class, could see their work.

The first concept that you should understand about this course are its learning objectives, as they are at the heart of this model. In this Business Communications course, the learning objectives were to:

- Plan professional reports while recognizing the contexts for writing within specific communities, determining how to make decisions concerning content, acknowledging how users' and writers' purposes affect textual decisions, and researching, summarizing, and documenting information sources.
- Apply strategies for presenting written information by engaging in the strategies and processes for gathering and organizing information useful to the document's user, purpose and situation; persuading users to accept document messages; defending persuasive values used in documents; using definition, description, summary, and analysis to achieve


ITHACA COLLEGE

01. WRTG2110 Template
[site map](#)

WARNING: This e-Portfolio is currently being used as a template. Published changes or deletions will affect new e-Portfolios created from this template.

About Me | My Goals | Resume | Work Samples

Work Samples

Writing for Audience

Writing to Persuade

Formatted Writing

Using Visuals

Creating Presentations

Teamwork

Learning Objective:
Plan professional reports while recognizing the contexts for writing within specific communities, determining how to make decisions concerning content, acknowledging how users' and writers' purposes affect textual decisions, and researching, summarizing, and documenting information sources.

Instructions:
INSERT THE ASSIGNMENT THAT BEST DEMONSTRATES HOW YOU HAVE MET THIS OBJECTIVE. You can insert it either by copy/pasting text or provide a file attachment.

In either case, YOU MUST preface the evidence with 5-10 sentences of reflection that explains how this assignment meets the objective.

document purposes; using clear, concise, and accurate language, evaluating document drafts to determine communication effectiveness, and offering and accepting and using peer review responses to improve documents.

- Design usable/readable documents that provide needed overviews and acceptable information sequences; use and organize titles, headings, and subheadings as needed; indicate document organization through use of hierarchical ordering, section sequencing with headings and subheadings, typographical markers, numbering systems, indentation, and enumeration; and emphasize information by using fonts, type styles, boxes, and lists.
- Integrate graphics into the text while ensuring consistency between text and graphics, designing usable, readable visuals, using white space effectively, and providing effective captions and labels.
- Apply strategies for oral presentation of information by using extemporaneous or impromptu methods; using a key-word outline; adapting content to meet listeners' needs and backgrounds; using overview, summary, and review techniques; and speaking clearly and directly, emphasizing important information.
- Produce a document within the framework of cooperative discourse by working as a member of a documentation team; participating in small-group work; negotiating team members' documentation responsibilities; and analyzing, planning, and achieving cooperative document goals.

In addition, my main goal for using ePortfolios in this course was to have my learners walk away with a professionally developed portfolio that they could use for applying for jobs and internships; it was important to me that the ePortfolio did not have any evidence that it was developed in a course.¹ Rather, I wanted it to be more website-like in its design. So, one of my first steps in preparing a template for my learners to use was to strip down the

learning objectives into clear, one to two word descriptive competencies that are important to employers, which are:

- Writing for Audience
- Writing to Persuade
- Formatted Writing
- Using Visuals
- Creating Presentations
- Teamwork

These became the basis for the Work Showcase section of the ePortfolio template.

Next, other sections were developed to help surround the Work Showcase section with more context. Thinking about Dr. Melissa Peet's work with her Generative Knowledge

This is the homepage of the ePortfolio template.

Interviewing process², along with basic models of resume design, I came up with the following sections, in this order (screenshot):

- **About Me** - a place to introduce, note discipline/interests, include an inspirational quote, and have a contact form.
- **My Goals** - an area to place short and long-term career goals.
- **Resume** - an area for uploading or creating a resume.
- **Work Showcase** - a place to reflect on the competencies and artifacts that demonstrate the competencies.
- **Class Assignments** - a hidden section primarily used as drafting board and assignment submission area for our regular coursework.

The point of this article is to introduce you to new ways of thinking about how to construct your learning and teaching in a more student-centric manner

Included in this template were instructional cues meant to help the learner complete that area of the ePortfolio. Throughout the course, we would, as a class, make time for working on the ePortfolios and we also included a showcase of them at the end of the semester so that reviews and comments could be made before final submission. All in all, this ePortfolio approach to teaching this course met my success criteria: my learners walked away from my class with some beginning skills in reflection, digital fluency, a better understanding of their strengths and weaknesses (in regards to our course objectives) and, most importantly, something tangible that they could continue to build upon and use for applying to internships and jobs.

FINAL THOUGHTS

“Traditional scientific method has always been at the very best, 20 - 20 hindsight. It’s good for seeing where you’ve been. It’s good for testing the truth of what you think you know, but it can’t tell you where you ought to go.” Robert M. Pirsig

Including ePortfolios in my course was well worth the time spent in developing the template and instructing my learners on how to use the development tool (Digication), how to reflect, and how to look at all of their work and competencies with a critical eye.

This model is just one example of what can be done to instill ePortfolios into learning and teaching and, hopefully, your entire program’s curriculum. This can all be accomplished outside of a CMS. To reiterate: the point of this article is to introduce you to new ways of thinking about how to construct your learning and teaching in a more student-centric manner, in addition to inspiring your learners to continually reflect, in a Kolbian way, via concrete experience, reflective observation, abstract conceptualism, and active experimentation.³

Eric Machan Howd (Ithaca, NY) is an Assistant Professor in the Writing Department at Ithaca College, where he specializes in teaching Professional Writing. He has worked in the field of Instructional Design as an administrator and is an advocate for using reflective-based pedagogies for life-long learning and professional development.

1. Although the template does have a campus banner, learners were made to change that banner to something of their own choosing, as long as it was professional in nature.

2. <https://sites.google.com/site/generativeknowledge/about-generative-knowledge-interviewing>

3. <http://learningfromexperience.com/about/>

Journey of the eWolf:

ePortfolios in Alaska

by DAVID DANNENBERG, HEATHER CALDWELL & PAUL WASKO

edited by CHRISTOPHER PISARIK

Evidence based learning is not a new concept but building an environment capable of capturing that evidence does not happen overnight. It evolves over months, maybe years, as the path is planned, achieved and, hopefully, marked for others to follow. ePortfolio use in Alaska is no exception. Six years ago, the University of Alaska Anchorage (UAA) began examining eportfolios as a way to capture evidence that our high impact teaching practices were effective. Starting as a small faculty-led taskforce, UAA eportfolio efforts (branded eWolf) have moved through Request for Proposals (RFP) tool selection, wide-scale adoption, course and program implementation, and now community outreach. In the past two years, eWolf use has increased both on campus and within our community. We currently have multiple initiatives in progress that cover everything from program assessment to faculty promotion and tenure to student scholarships and Alaska Native identity. We are also partnering with local K12 schools to support evidence-based learning throughout a student's primary and secondary education. While each of these areas are worthy of their own article, our purpose is to provide a broad overview of the eportfolio activities occurring both at the university and in our community. By detailing

our experience at UAA we hope to provide a roadmap for others to ensure their eportfolio environments are equally strong, vibrant, and successful.

TAKING THE FIRST STEP

UAA's eportfolio use began more than a decade ago, led by the individual efforts of faculty members and ePortfolio pioneers, Helen Barrett and Bruno Kappes. While technology and media might have changed over the years, UAA's desire to document learning never wavered. Building off these early efforts, in 2010 a faculty-led task force was formed and over the course of two years they examined eportfolios as an assessment tool. This task force consisted of over 20 faculty members from multiple disciplines. They documented the systems, processes, and support structures needed to implement and support a successful ePortfolio program. Their efforts ultimately led to a Faculty Senate motion calling on the administration to support ePortfolio use. In response, the Provost created and funded the Office of ePortfolio Initiatives, housed within the Academic Innovations & eLearning (AI&e) department.

From the beginning of our journey, it was immediately apparent that a dedicated and experienced resource was needed to work as chief evangelist, change catalyst, and program support officer. Fortunately, a nationwide search led us to hire [Paul Wasko](#) who brought over 20 years of eportfolio experience, to fill this role in 2014. One of Paul's first actions as the ePortfolio Program Manager was the creation of an advisory committee with representation from disciplines and services across campus, including student representation. Building off the Faculty Senate task force's work, this committee identified and defined administrative and functional requirements for a centralized eportfolio system. Using these requirements, the committee worked with our Procurement office to follow both a Request for Information (RFI) and Request for Proposal (RFP) process. We realize no one is excited by having to follow a very structured RFP process, but by utilizing this process we were able to clearly define and articulate our needs, and then quickly and fairly evaluate the submitted proposals against them. So while we did spend months defining and prioritizing our needs, once they were documented in the RFP we were quickly able to move through the evaluation stage, identify our top choices, and invite selected vendors to give in-person demonstrations. Ultimately, this led to selecting Digication, which we branded eWolf at UAA, as the best system and partner for us, and we have since developed a strong working relationship with them.

While technology and media might have changed over the years, UAA's desire to document learning never wavered.

SUSTAINING THE JOURNEY

Another essential element to the ePortfolio Initiative was determining a long-term sustainable funding stream to keep the program running. When the Provost created the program, he funded one position with the understanding that as the program grew AI&e would fund all other expenses. Initial student representation and involvement as part of the advisory committee proved essential in this

process. By working with our students from the beginning we were able to demonstrate how eportfolios could be of benefit to them well after graduation as part of their ongoing career and professional development. Moreover, by forming an early and strong collaboration we were able to propose and implement a new student eportfolio fee of \$16/year to fund other expenses of the program. Ultimately, this led to a cost-sharing structure with funding for the program provided by both administration and students that ensures sustainability for years to come.

OUR CURRENT LOCATION

VENDOR RELATIONSHIP: PRODUCT VERSUS PARTNER

Within our RFP process we carefully explained that UAA sought to build a strong partnership with our vendor. UAA viewed this partnership as critical to establish a distinction between a service provider that is only providing a "product" (or commodity) for the University versus engaging with the provider as a "partner" in project activities. Knowing the difference between these approaches helps define how we manage the relationship. Since fishing is such a passion here in Alaska, let's use a fishing analogy to explain the distinction between these two concepts:

- Goal: We are going halibut fishing in Whittier, Alaska.
- Challenges: We need to buy bait (herring) before we go.
- Product-based approach to buying bait: We stop by the local supercenter that has the cheapest bait around. We are in-and-out in five minutes and on our way.
- Partner-based approach to buying bait: We stop the local fishing store. At the checkout stand, the clerk says we should also buy a package of squid since the halibut were hitting on squid earlier this week. The clerk then asks us where we are going and suggests a couple of spots to try if we don't have success at our initial spots. The stop was almost thirty minutes, but we left with a great deal of additional information and a stronger chance of success.

For the University we expect and maintain a "partnership" with our portfolio vendor, Digication. As a result, we spend time and energy to share/inform Digication leadership on what is happening within our eWolf Program. It is not unusual to have multiple conversations with Digication

leadership and support each week. These conversations frequently run 30-60 minutes depending on the topics and project scopes. Conversation topics include: what’s working (or not), new projects, modifications needed, tasks and associated updates, recommendations based on best/promising practices, and project politics (small “p”). In many respects, we have treated Digication leadership (Jeffrey Yan - CEO and Kelly Driscoll - President) as an extension of our eWolf team.

The result of this partnership to date:

- Successful piloting (Spring 2015) and deployment (Fall 2015);
- New software development pilots;
- Community K-12/UAA/Digication pilot;
- Digication Innovation Award for our Native Student Service’s Office on exploring ePortfolios, cultural identity, and historical trauma among native students; and,
- Annual training events that brings together staff, faculty, and Digication leadership.

WITHIN THE UNIVERSITY: STUDENT AFFAIRS

Although UAA’s eportfolio effort was initiated by Faculty Senate and Academic Affairs leadership, Student Affairs participation has played a critical role in shaping the eWolf program. There are a number of Student Affairs services that either impact or take advantage of ePortfolio services such as orientation, advising, financial aid (scholarships), diversity, and placement services (see WCET’s Beyond the Administrative Core [Overview](#) for a working definition of student affair functions). Student Affairs staff associated with these services have helped shape eWolf use. Given the limitation of space we focus on two notable efforts within UAA’s Student Affairs: Native Student Services (NSS) and the Multicultural Center (MCC).

NATIVE STUDENT SERVICES:

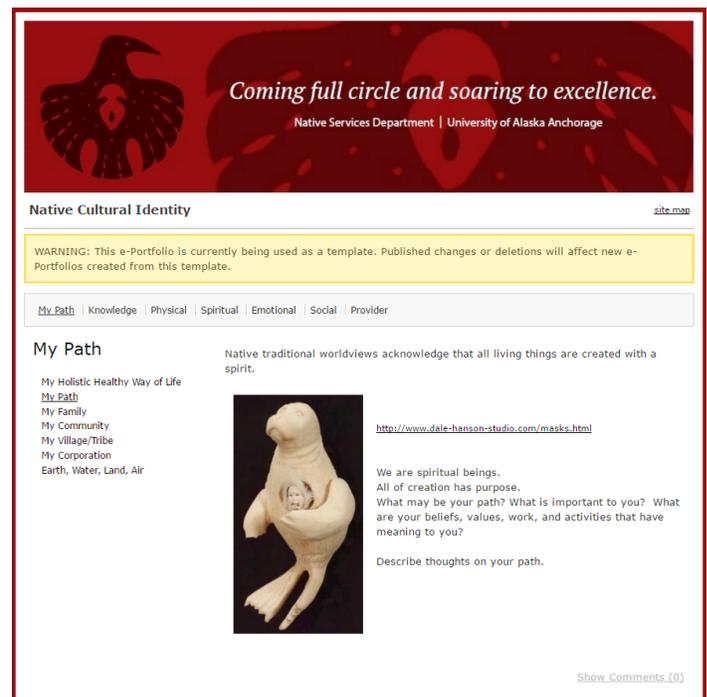
NSS is a small unit for Native and rural students that provides support services to increase their scholastic achievement, student retention, and personal success. In summer 2016 eWolf staff was invited by NSS staff to explore Digication’s service. It was during this initial discussion that Transition Advisor Sheila Randazzo asked a profoundly insightful and simple question: “How

could student engagement practices or portfolio services assist Native students in understanding and developing their cultural identity?” Our answer, “I don’t know but, wow, can we work with you to find out?”

That simple question led NSS to develop a project that has brought together Native elders, students, local experts, and national leaders to examine how eportfolios can support identity development with our Native students AND help address the challenges of historical trauma among the Native community. In addition to a rich set of conversations, the project to-date has: produced and successfully tested a portfolio template, identified community partner opportunities, identified curriculum needs/desires, and was recognized by Digication with an Innovation Award (the first of its kind for Digication).

MULTICULTURAL CENTER:

MCC’s mission is to provide programs and services designed to facilitate access, persistence, success, and graduation of underrepresented minority students. One of MCC’s showcase programs is the AHAINA (African American, Hispanic, Asian/Pacific Islander, International



Version 1 of NSS’s cultural identity template.

and Native American students) Men and Women of Excellence Scholarship; the scholarship provides a tuition waiver to support students' academic goals. In 2016, AHAINA incorporated eWolf into their application process with wonderful results. Instead of a traditional scholarship application students were instructed to complete and submit an application portfolio. The result, a deeper, richer application process that allowed the student's personal story(ies) to "come alive." In addition, MCC awarded digital badges to all successful applicants (a first at the University). The success of this effort has led to deeper integration into MCC services to find ways to engage an entire office and add value to their student-focused efforts.

subcommittee representative, began conversations to discuss the process and to evaluate the best course of action. ePortfolio templates based on the two faculty unions' Collective Bargaining Agreements and the Faculty Evaluation Guidelines were made and an electronic review process was built into eWolf making the entire process electronic, from submission to final review. During AY 2014/15, Pilot Phase I was released and faculty had the option to opt in. Summer drop-in and individual workshop sessions were offered to participants, peer review committees, and Deans. In September 2015, participants from across campus submitted 4th year review files, Tenure/Promotion files, Post-tenure files and Promotion files using eWolf.



Chelsea Marrie T. Parrocha - 2016 AHAINA Woman of Excellence recipient.

WITHIN THE UNIVERSITY: ACADEMIC AFFAIRS

With the growing eportfolio interest on campus, Faculty Senate created a subcommittee to examine Promotion and Tenure e-files. Based on their conversations, Heather Caldwell, ePortfolio Strategist, and Arlene Schmuland,

Throughout the review process we solicited feedback from submitters and reviewers. Overall, it was a huge success but as with all new initiatives there was room for improvement. Feedback ranged from faculty's excitement to include a variety of materials, including rich text, multimodal, and video to demonstrate teaching and document research/creative activities, to their recognition that the front-end work, scanning and uploading non-digitalized materials, was time consuming. Reviewers expressed a strong desire for a standardized template to make the review process more efficient, but also noted the review workflow needed to be streamlined so documents could be easily harvest for long term retention and for reviewers' viewing ease.

For Phase II, we made a list of best practices and adjusted the review process. For example, items should be embedded into eWolf whenever possible and design elements should be taken into consideration for accessibility. Reviewer guidelines are being crafted to help reviewers better navigate files and submit reviews. Discussions at Faculty Senate still need to occur as converting the process to an electronic format unveiled the need to re-examine certain elements of the P&T process including questions such as who owns the templates; who is responsible for moving people in and out of the review process; and what are the standards for file contents housed in a third party site.

Outside of P&T files, we invited faculty to create their own public professional eportfolios. These portfolios allow faculty to showcase their research, courses they teach, and outside interests. Some faculty highlight work they do with within the community as well as student projects, internships, and more. Faculty buy-in is extremely important in the success of such an initiative, but it's

Journey of the eWolf

DAVID DANNEBERG, HEATHER CALDWELL & PAUL WASKO

Examples of faculty's professional portfolios.



Dorn Van Dommelen [site map](#)

[Bio](#) | [Work and Education](#) | [Teaching](#) | [Scholarship](#) | [Curriculum Vitae](#) | [Contact](#)

Bio

[About Me](#)

Dorn Van Dommelen



My wife, Diane, and I live in Anchorage with our son, Puck (16), but our heart is at our off-grid cabin where we lived year-round for 13 years, raising our children. My personal and family life reflects very strongly my ideals. We try to live as close to the natural world as we can, given that we are well integrated into a modern economic system. We cook meals from scratch, garden, harvest local wild foods, and take many opportunities to enjoy our natural surroundings. Our cabin is heated by locally and sustainably harvested firewood and we haul water from a local well and the stream that runs by our home. My wife homeschooled our children using a pedagogy and curriculum inspired by the writings of Rudolph Steiner, and I am committed to doing the vast majority of the construction labor on our home by myself, using hand tools when feasible. We enjoy hiking and skiing.

[Show Comments \(0\)](#)



New Educator Award (NEA)

Terry A. Nelson OBTC New Educator [site map](#)

[Welcome](#) | [Teaching Philosophy](#) | [Curriculum Vitae](#) | [Syllabi](#) | [Feedback](#) | [Writing Samples](#) | [Professional & Service Activities](#)

Welcome



Welcome to my ePortfolio for the OBTC New Educator Award Nomination

Nominee: Dr. Terry A. Nelson
Title: Assistant Professor of Leadership
University: University of Alaska Anchorage
College: College of Business and Public Policy
Department: Management & Marketing

[Show Comments \(0\)](#)



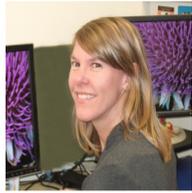
KATIE WALKER
Instructional Designer

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Katherine Walker

I am an innovative instructional designer with a wealth of experience designing high quality online courses and delivering engaging presentations. I have been in the field of education most of my career and have a Masters Degree in Education from the University of Virginia.

As an instructional designer for the College of Education (COE) at the University of Alaska Anchorage (UAA), I support approximately 50 faculty members in the design and delivery of face-to-face, online, and hybrid courses in teacher/principal preparation. My goal is to help the College of Education provide an effective and engaging learning environment for our future teachers.



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About Me

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Born and raised in Japan, I am currently teaching Japanese Language and Culture at University of Alaska Anchorage. My husband is a native of Hong Kong and is a conductor who has led orchestras around the world including Japan, Czech Republic, Poland, Germany, and U.S.A. My two children were born in Urbana-Champaign, Illinois, where my husband and I were graduate students. My son, 29, graduated from UAA with B.A. degrees in History and Japanese, taught English as a JET ALT in Hokkaido, Japan for two years, received an M.A. degree in East Asian Studies from University of Illinois, Urbana-Champaign, and is currently pursuing his Ph.D. at University of Pittsburgh in Linguistics. My daughter, 24, graduated from University of Michigan School of Music in Violin Performance, and is currently pursuing a Master of Music degree at Hochschule für Musik Hannover, Germany.

Aside from my work at UAA, my life centers around my family and the musical world. Having studied the violin since the age of 5, I have kept music close to me my whole life and am currently a tenured first violinist in the Anchorage Symphony Orchestra. I also enjoy playing music with my family and friends in town.

Relating to work, I wear these hats for UAA and the community:

- Professor and Coordinator of Japanese Program
- Director of UAA Montgomery Dickson Center for Japanese Language & Culture
- Co-Founder and Executive Board Member of Alaska Association of Teachers of Japanese
- Anchorage Sister Cities Commissioner under Anchorage Mayor's Office.

I hold a Ph. D. degree in Comparative Literature from the University of Illinois Urbana-Champaign.

also a crucial element for student buy-in. Recognizing the need for buy-in, some departments, such as English and Education, are pushing for department-wide faculty portfolios.

As more faculty and departments integrate eWolf into the curriculum, more students are working within eWolf, too. To date, eportfolios are being used in every college. While some areas have integrated portfolios into their entire curriculum for programmatic and student assessment and/or accreditation, such as the College of Education, Legal Studies, Nursing, Dietetics, and English, other departments/colleges are slowly integrating eportfolios with either a signature class or assignment, or with individual faculty members incorporating portfolios into their courses.

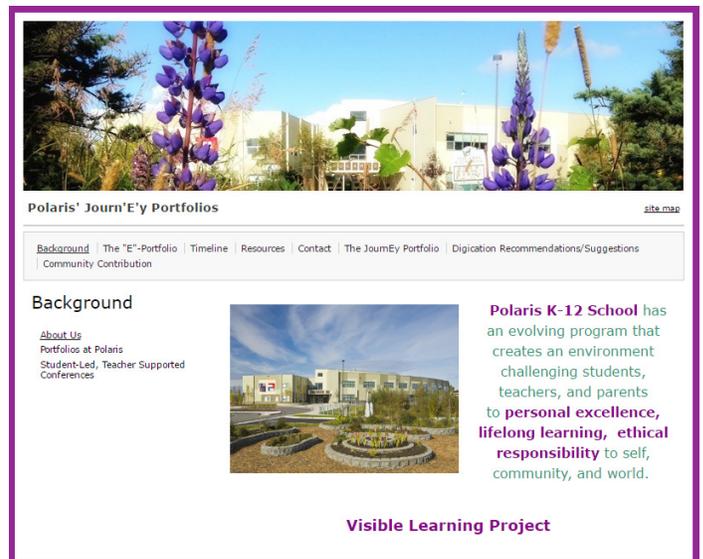
Another critical element in success, was to build a healthy eportfolio community and culture on campus. To start, we created an annual 2-day intensive filled with presentations from faculty early adopters, instructional designers, portfolio leaders, and more, that provides a range of topics including showcase sessions and makerspace time. We also added eWolf sessions to year-round professional development and collaborate with other campus projects to support their ongoing efforts. Finally, we offer monthly focus workshops on topics such as faculty portfolios, reflection, and more. From the beginning, our driving thought is that eportfolios are more than a tool, instead they support pedagogy that is already happening inside the classroom.

OUR COMMUNITY AND BEYOND

UAA is a public institution and engages with and supports the broader southcentral Alaskan communities in their research, education, and workforce goals. Successful eWolf efforts within UAA has led us to explore how portfolio services could strengthen/enhance local partnerships. UAA's relationship with Digication is and has been a critical component of this work. Our community partnerships established the need for separate portfolio instances with Digication to address various privacy issues/concerns. Historically, Digication has shown a willingness to engage in entrepreneurial efforts that benefit the broader education community (see digication.com/googleapps). Our community pilots then inherit the following structure:

- University: Project champion, consulting, and training support.
- Digication: Licensing support.
- Local partner: Operational/local lead, local support, and communication.

We have several community partnerships in the works. We chose the Polaris K-12 School collaborative as it illustrates a dynamic relationship between vendor, university, community, and the Anchorage School District. Polaris is an alternative school within the ASD. Over the years the school actively engaged in internal conversations on how to incorporate portfolio thinking across their curriculum. Initial conversations with Polaris was facilitated by UAA College of Education leadership who saw an opportunity to bring together the various parties and explore an innovative partnership. The UAA/Polaris/Digication pilot was recently recognized at a statewide conference for its work, and as their works evolve, they are documenting their portfolio journey (see asdk12.digication.com/polaris_journey_portfolios/About_Me/published). In addition to their work with students, teachers, and staff, Polaris will be using the portfolio to support their AdvancED (advanc-ed.org/) accreditation work.



Polaris is documenting their portfolio implementation efforts.

THE PATH AHEAD

During the early days of the project, our goal was to establish a strong eportfolio culture on campus, to provide faculty and student support, and to strategize with ongoing campus initiatives and departments to develop innovative eportfolio usage. To date, eWolf has achieved a solid level of success within the University and despite an uncertain state budget, we are confident in eWolf's continued integration with campus culture and community partnerships.

As we wrap up our first year of full rollout, we have roughly 3,000 student portfolios and 620 faculty portfolios. Student portfolio numbers are still rather low, around 1% of our entire student body. But change comes slowly, especially with curriculum (re)design. The shining star, however, is faculty numbers; faculty use is about 25%. This is a great sign, illuminating we are successfully building an eportfolio culture on campus. Faculty are mentoring each other and sharing their professional, research, and classroom eportfolios with colleagues; through workshops, intensives, and departmental meetings, faculty who have not yet drunk the proverbial kool-aid can see how their colleagues utilize portfolios to support pedagogy as well as initiatives across campus. As mentioned earlier, the first step for successful campus-wide adoption is faculty buy-in. We will continue to foster the eportfolio community through the 2-day intensive, professional development and promotion and tenure. Additionally, we are working on other ways to bring together and showcase faculty and student work.

Through training and implementation, faculty and administration are starting to recognize that an eportfolio is more than a simple tool. Rather, it is a pedagogy that focuses on process and product, assists with metacognition, and increases student involvement in their own education. As the eportfolio community continues to build, we expect to see more departments coming on board to explore how eportfolios can impact their classroom practices. In the coming year, we are excited to continue our efforts with programs such as the College of Education and College of Business and Public Policy, the Department of English, School of Nursing, GER courses, and more.

But as our article highlights, eportfolios also live outside of Academic Affairs. In the coming year, we are

continuing our work with Student Services departments, such as Orientation, Career Services, and Native Student Services to see how eWolf can support their programs and assist students in reaching their goals. Additionally, we are expanding the scholarship application work and are in conversation with several programs to see if eWolf is a good fit for their scholarship applications.

Our core belief is that the more we integrate eportfolio use into key areas - both Academic Affairs and Student Affairs - the more beneficial the program becomes. We have allowed this belief to shape the development of eWolf here at UAA. However, we also recognize the fact that no two programs are the same and will have both positive and negative events that shape its development and future success. By detailing our journey and experience we hope to provide a "roadmap" that others find useful and use our journey to make their eportfolio more successful moving forward.

David R. Dannenberg (Anchorage, AK), Director of Academic Innovations & eLearning at the University of Alaska Anchorage, leads UAA's efforts to innovate teaching through the use of instructional technology. He currently serves as Co-Executive Editor of The AAEEBL ePortfolio Review and the Public Four-Year Institution Representative to the WCET Steering Committee.

Heather Caldwell (Anchorage, AK) earned her MA in English Literature, Rhetoric and Composition from the University of Alaska Anchorage. She taught first and second year composition for over 5 years before jumping to the other side of the house where she's now an ePortfolio Strategist. Her most recent projects include campus-wide eportfolio Promotion and Tenure files, Undergraduate Research Scholarship eportfolio files and evaluation, and supporting faculty members in their sabbatical and SoTL eportfolio projects.

Paul Wasko (Anchorage, AK) is the ePortfolio (eWolf) Initiative Coordinator at University of Alaska Anchorage (UAA). Prior to joining UAA in January 2014, Mr. Wasko was the Director of eStudent Services for the Minnesota State Colleges and Universities (MnSCU) where he directed eFolioMinnesota, the largest ePortfolio project of its type in North America. Prior to joining MnSCU in 2001, he held a number of leadership positions in various state agencies, including heading education technology initiatives for the State of Minnesota.

A learning-oriented framework for integrating ePortfolios in a post-graduate module in distance education

by CHRISTA VAN STADEN

edited by ANDREW HARVER

The Association of American Colleges and Universities (AAC&U) recently added eportfolios to George Kuh's (2008) list of High-Impact Practice (Moore 2016). The addition of eportfolios as the 11th high impact practice was the first modification of the list since 2008. The inclusion of eportfolios as a high impact practice is important. According to Eynon and Gambino (2017) eportfolios can play a unique role in 21st century higher education due to the capacity to support coherence and integration, if "done well". When the post-graduate module in tertiary distance education I was responsible for was earmarked in 2014 to pilot eportfolios in the curriculum, I needed to understand how student success could be improved at the University of South Africa.

The University of South Africa (Unisa), is the largest institute for distance education in Africa. More than 300 000 students register annually for a wide variety of courses and modules. Due to the nature of distance education, Unisa traditionally relies overtly on final examinations as method for assessment. According to Sinhaneti and Kyaw (2012) examinations and a failure

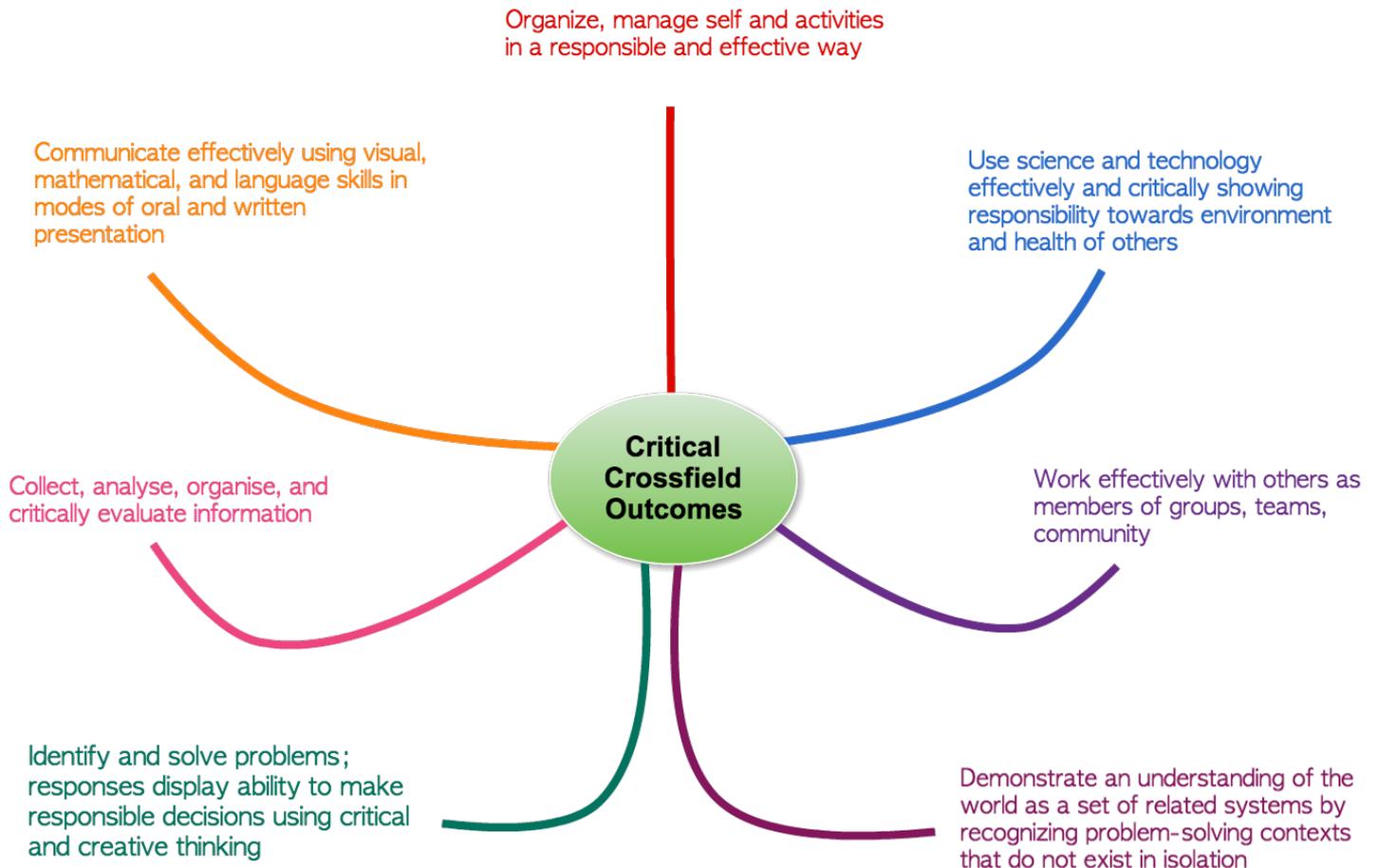
to try out 'best' ways promote continuous use of rote-learning strategies. Mathias, Bruce and Newton (2013) found that both English and Chinese students intended to regulate their own learning, but both groups reverted to rote-learning when they failed to understand or when they experienced examination pressure. Rote-learning simply does not work (Fata-Hartley 2011), therefore, the greatest challenge in higher education is to develop self-regulated learners (Mathias, Bruce, and Newton 2013). In a quest to promote continuous learning at Unisa, the Review and Reconfiguration of Unisa's Assessments Systems and Practices Project piloted the integration of eportfolios as a method for alternative assessment (Naicker 2015).

In the past two centuries approaches to assessment have dramatically shifted from summative to competency-based techniques that foster reflective learning and professional growth (Chertoff 2015). Most scholars agree that learning is central to subsequent success and satisfaction in life, a nation's economic competitiveness and productivity, and the development of healthy and civically engaged communities (National Institute for

Learning Outcomes 2016, 3). Due to constant change and the exponential growth of information and knowledge it is insufficient to grade current knowledge, skills, and techniques. Higher education is responsible for transferring well-rounded, professionally mature graduates into 21st century work places (Devece et al. 2015, 64). Therefore, we should integrate competency-based, learner-centered approaches to develop active, autonomous, strategic, thoughtful, cooperative, and responsible beginner professionals (Devece et al. 2015). In order to understand how eportfolios could be integrated to fulfil this mammoth task in distance education, the following question guided the integration of eportfolios into the curriculum of the module I was responsible for:

How can eportfolios be integrated in the curriculum of a post-graduate module in distance higher education to promote learning and development of key competencies?

Fig. 1: Seven South African critical cross-field outcomes.



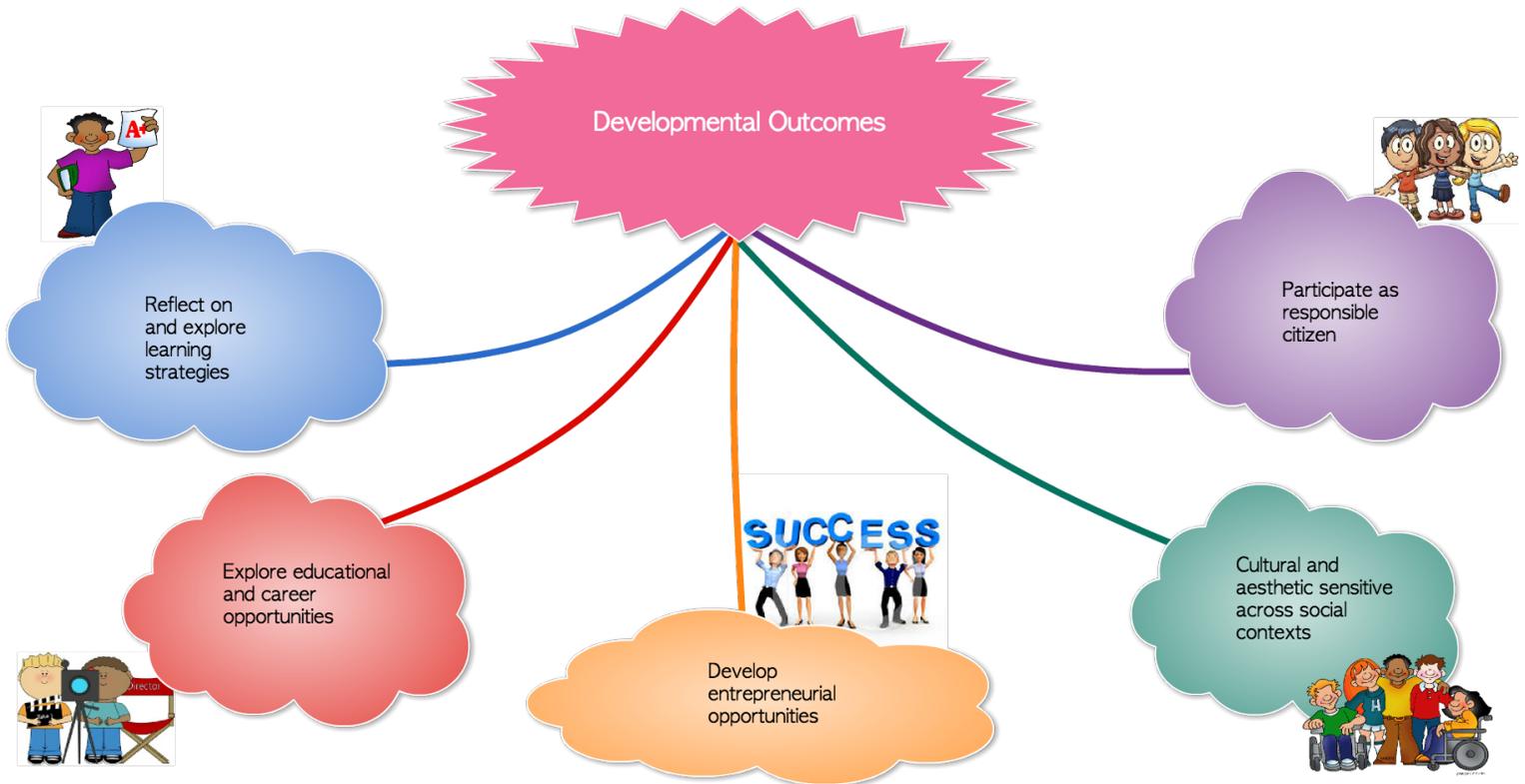
The background to the research will be provided in the following section.

IN QUEST OF MEANINGFUL LEARNING IN DISTANCE EDUCATION

In South Africa, all teaching and learning in tertiary education have to be guided by seven Critical Crossfield Outcomes, regarded as key competencies to be effective in 21st century working places (South African Qualifications Authority 1997). Therefore, all 25 public universities are responsible for ensuring that opportunities are provided for developing these key competencies (see Figure 1).

SAQA also developed five Developmental Outcomes (see Figure 2) that need to be integrated to guide all teaching and learning in higher education.

Fig. 2: Developmental outcomes (South Africa)



These outcomes embody key competencies, also known as generic, core, employability, graduate, or transferable competencies. All professionals should be able to put these transferable skills, capabilities, and techniques into practice to be effective in the real world working environments. Without a framework, implementing this outcomes-based model at module level is a challenging task. Killen and Spady (1999) categorized the competencies along three categories: life roles, underlying skills and abilities, and ways of thinking. In a related Australian context, the Australian Curriculum Assessment and Reporting Authority (2013, 7) categorized competencies along four categories: life roles, ways of working, tools for working, and ways of thinking. These categories relate to the set of South African key competencies; therefore, I have newly framed the South African key competencies (see Table 1).

Critical thinking, problem-solving, the ability to plan and realize innovative projects, and a competency for systemic thinking (Rieckman 2010, Devece et al. 2015) are currently regarded as important 21st century skills. However, the ability to use intellectual, personal and social resources to participate as active citizens, contributing to economic development and flourish as individuals in a diverse and changing world (James & Pollard 2011), may be even more important. Providing these opportunities at the University of South Africa (Unisa), with its unique learning environment, is a mammoth task.

Unisa was established in 1873 to primarily cater for distance education in South Africa. Currently, Unisa (300 000) is the largest out of the 25 public universities, followed by the University of Tshwane (60 000), the University of Johannesburg (48 000), North West University (43 500), and the University of Pretoria (28 500). Based on the statistics, Unisa is responsible for training more students

than the four largest contact universities as a group. Providing opportunities for developing key competencies grouped under ‘using tools for working’ and ‘ways of thinking’ (see Table 1) might not be challenging. However, providing opportunities for practicing key competencies grouped under ‘life roles’ and ‘ways of working’ (see Table 1) is a challenging task in traditional distance education.

Currently, technologies can be integrated to provide opportunities to develop all key competencies, but approaches to assessments need to be reviewed to achieve maximum validity both in terms of learning outcomes, learning processes and key competencies. The reliability and validity of summative assessments are contested; therefore, I needed to understand how assessments can be improved.

IN QUEST OF MEANINGFUL ASSESSMENT OF EPORTFOLIOS

The integration of eportfolios in a curriculum can improve student achievement in this new educational paradigm (Chertoff 2015). Tochel et al. (2009) argues that the flexibility of eportfolios brings benefits for students,

assessors and organizations, and encourages more enthusiastic use of the tool itself. ePortfolios provide opportunities to demonstrate learning outcomes, but also to demonstrate development. Therefore, it is not sufficient to integrate eportfolios to replace examinations, new approaches need to be developed to maximize the impact of eportfolios. The shift to eportfolios was based on the idea that successful, competency-based education necessitates a robust and multifaceted assessment system with assessment processes that are more continuous, frequent, criterion-based, and developmental (Chertoff 2015). Therefore, numerical grades and pass-fail hierarchies have to be replaced by self-assessment, introspection, and appraisal of achievements in core competencies (Chertoff 2015). Various assessments can be introduced when eportfolios are integrated, therefore the overtly reliance on summative assessment need to be reviewed.

SUMMATIVE ASSESSMENT

Summative assessment, or assessment of learning is usually in the format of written tests and examinations. Traditionally, Unisa relies heavily on summative assessment. Techniques used in summative assessment, omit opportunities to demonstrate achievement towards higher level cognitive and communication skills, the

Table 1: Framework for South African key competencies.

Competencies to be developed during South African higher education			
<i>Life roles</i>	<i>Ways of working</i>	<i>Tools for working</i>	<i>Ways of thinking</i>
3. Self-directed learner	1, 4. Problem-solving skills 1, 4. Analytic capabilities 1, 1, 4. Judgement making skills 1, 4. Decision-making skills	5. Use language, visual and mathematical skills to express self in written or oral communication	7. Broad system thinking 1. Critical thinking 1. Creative thinking
6, 9. Responsible citizen in global world	1. Creative expression	6. Use technology as tool for learning	8. Explore and use various learning strategies
11. Explore career and educational opportunities	2. Collaborative team worker	6. Use technology for work	10. Cultural/aesthetical across various social contexts
11. Skilled career planner	1, 4. Capability to respond on creative work of others	12. Develop entrepreneurial opportunities	8. Reflect on effectivity of learning strategies (metacognition)

ability to learn both independently and collaboratively and growth. Evidence shows that tests reduce motivation to learn, impose stressful conditions preventing some students from performing as well as they could, and encourage teaching methods that promote shallow and superficial learning rather than deep conceptual understanding (Assessment Reform Group 2002). Due to its weak reliability, unfair and incorrect decisions can be made about some of the students, affecting their progress both within and beyond the learning context (Assessment Reform Group 2002). Based on low success rates and high dropout rates, Unisa is currently investigating alternative methods for assessment.

Traditionally, students submit one or more assignments to contribute towards a year mark, that made up 20% or less of the final mark. The idea was that a year mark would encourage continuous learning. The final mark for the module I was responsible for consisted of one examination and four assignments. The approach was ineffective, since written assignments and examination deprived students from opportunities to demonstrate their ability to use technology effectively in their own classrooms. The move away from standalone summative assessment was inspired by the idea that assessment should be valid, reliable, practical and have an impact on teaching, learning and students' motivation for learning (Assessment Reform Group 2002; Knight 2002; Carless 2007, 57). By themselves, summative assessments are insufficient for maximizing learning, since it is simply too late to intervene when results are only available after completion of assessment tasks (McTighe and O'Connor 2005, 11). The assignments were formative assessed.

FORMATIVE ASSESSMENT

Formative assessment, or assessment for learning, occurs concurrently with instruction and aims at providing specific feedback to allow for an understanding of how teaching can be improved to enhance learning (McTighe and O'Connor 2005). This approach is valuable in distance education. Although formative assessments can be graded, it should not be limited to grading, since it aims at an ongoing process arising out of the interaction between teaching and learning. ePortfolios can play an important role in distance education if students are required to implement the feedback. Students can be required to display both versions of an assignment to allow assessing of development during the course of the year. The

assumption was made that visible cycles of continuous improvement might have a positive impact on learning. In distance education, various factors can impact on student success, therefore pre-assessments might be needed.

DIAGNOSTIC ASSESSMENT

Diagnostic assessment, also known as pre-assessment, precedes instruction and can be used to understand how teaching and learning can be improved. Unisa developed an online [Student Readiness Tool](#) to allow students to assess their readiness for open distance education. However, we did not pre-assess their readiness for eportfolio development. From a learning-oriented approach to assessment, it should not be problematic since students can learn from one another.

LEARNING-ORIENTED ASSESSMENT

Learning-oriented assessment is based on three principles, namely that (Carless 2007):

- assessment tasks should be learning tasks
- students should be, individually and collectively, actively involved in assessment, and
- feedback should provide opportunities to improve current as well as future learning.

A learning-oriented approach does not exclude other approaches (see Table 2 on page 41), but rather provides a framework for encompassing other types of assessment for a meaningful integration of eportfolios.

When the focus shifts to learning, new frameworks need to be developed to enhance lifelong learning and to promote participative strategies (Rodriguez-Gomez, Quesada-Serra, and Ibarra-Salz 2016). Therefore, a learning-oriented framework was designed to guide the integration of eportfolios in the curriculum of the post-graduate module, *Instructional Techniques and Multimedia in Adult Education (INTMAEU)*.

A LEARNING-ORIENTED FRAMEWORK FOR EPORTFOLIOS

The optimal methodology for assessing attainment of key competencies is less transparent (Chertoff 2015). Therefore, I have designed a learning-oriented framework (Figure 3 on page 42) to guide the students towards compiling

Table 2: Approaches to assessment.

	<i>Approaches to assessment</i>			
Components	<i>Diagnostic assessment</i>	<i>Summative assessment</i>	<i>Formative assessment</i>	<i>Learning-oriented assessment</i>
Purpose	To improve teaching	To summarize what has been learned (McTighe & O'Connor 2005:11)	To identify areas for improvement of teaching	To support student learning
Aim	To identify gaps in knowledge, skills and techniques	To certify achievement towards learning goals	To identify gaps in teaching practices	To develop competencies
Approach	Teacher-centered approach	Teacher-centered approach	Teacher-centered approach	Learner-centered approach
When to be conducted	Before teaching commences	At end of teaching period, may be at end of learning unit	At end of teaching period, can be integrated during teaching period	Continuous assessment
Results	Used to understand how teaching can be improved	Used to encapsulate and report results as a score or grade	Used to improve teaching	Used to improve current and future learning
Feedback to students	None, used to improve teaching	Grade on a report	None, used to improve teaching	Prompt and frequent in order to guide students towards improvement of current and future learning

eportfolios that portray not only their achievements towards the subject-related learning outcomes, but also the development of key competencies during the course of the year.

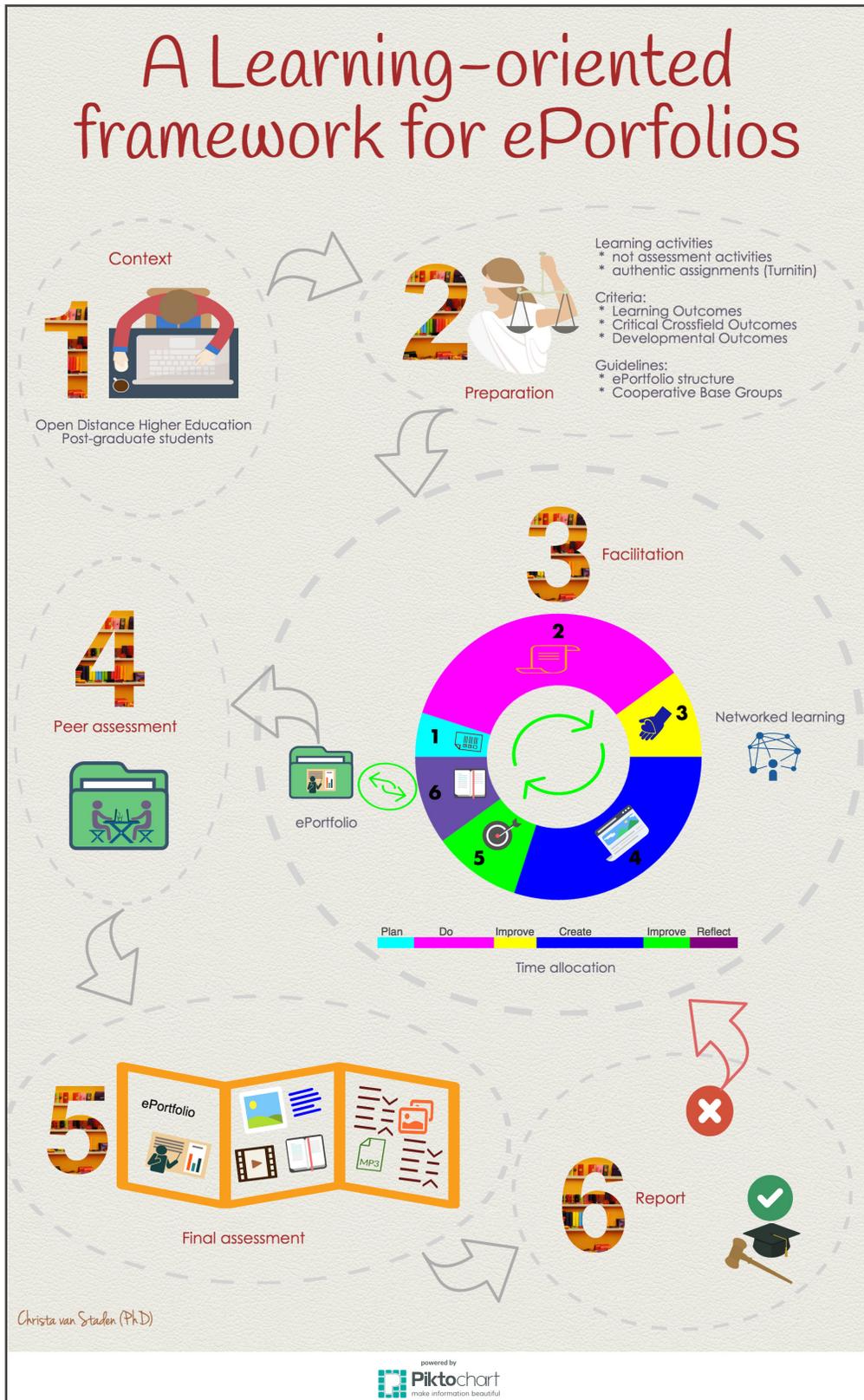
The learning-oriented framework consisted of six distinctive phases. As post-doctoral fellow, I was temporarily involved until a new lecturer could be appointed. Therefore, I cannot report on the efficiency of all of the phases of the framework. However, one of my students shared her eportfolio with me after graduation since they were allowed to download and share their eportfolios. Based on the quality of this eportfolio, developed within the learning-oriented framework, I have asked her to walk us through the eportfolio while reflecting on it (see the [video-clip](#)). Where applicable, I am using transcriptions of her voice ('the student') to illustrate the relevance of this framework in open distance higher

education. During the first phase, the context where eportfolios were to be integrated, was determined.

PHASE 1: DETERMINE THE CONTEXT WHERE EPORTFOLIOS WILL BE INTEGRATED

During phase 1, the focus was placed on the context in order to understand how eportfolios could be integrated in the curriculum to replace the traditional formal examination. The students enrolled for the certificate in tertiary education were post-graduates, therefore the characteristics of adult learners were taken into consideration when the learning activities were designed. According to (Knowles 1975), adult learners learn best when they can apply new knowledge. The student reflects:

Fig. 3: A learning-oriented framework for a meaningful integration of eportfolios at Unisa.



Due to the efforts I have put into my eportfolio, I can truly showcase the ability to design my own work sheets and material and to employ a wide variety of instructional techniques, learning theories and media.

Various aspects needed to be carefully planned during this explorative integration of eportfolios.

PHASE 2: PREPARATION

During this phase, the learning activities and guidelines for compiling eportfolios that demonstrate growth were designed and assessment criteria were identified.

DESIGNING LEARNING ACTIVITIES

Carless' (2007, 65) contended that assessment tasks should promote the kind of learning that is sought. According to (McGaw 2013, 3), co-curricular and extra-curricular activities can be designed to foster the development of key competencies, but key competencies can also support acquisition of the knowledge, understanding and skills related to position-specific competencies. Therefore, learning activities were based on learning outcomes, but designed to simultaneously foster the development of key competencies.

Key competencies represent learning continua that have to be developed by the end of a learning programme (Australian Curriculum Assessment and Reporting Authority 2013). Therefore, four questions were asked when each of the subject-related assessment tasks were designed (see Figure 4 on page 44).

Assessment becomes responsive when students are given appropriate options for demonstrating knowledge, skills, and understanding since students often put forth greater effort and produce higher-quality work (McTighe and O'Connor 2005). Developing competencies require a high degree of individual reflexivity (Rieckmann 2010). Students differ in how they prefer to take in and process information, and also in how they best demonstrate their learning (McTighe and O'Connor 2005). Therefore, instead of focusing on learning outcomes, appropriate choices can be offered. Table 3 indicates how such choices can be facilitated in the context of a wiki development task. Students could for example be asked to complete the first assignment to develop ways of thinking (See Table 3 on page 45). Or, they can be allowed to complete any of the four assignments. For example, the students were required

to use a Wiki to collaboratively create a knowledge base. The student attested to the value of the wiki assignment as follows:

Collaborative learning is more time consuming but far more valuable and effective than alternative methods. The work we created together, has the potential to be better than any project we come up with on our own. However, more facilitation and moderation would improve the work we developed.

Instead of requiring of students to plan a lesson right from the start, various aspects of the lesson plan were unpacked in assignments to allow for deeper learning. The student reflected on the structured facilitation of learning as follows:

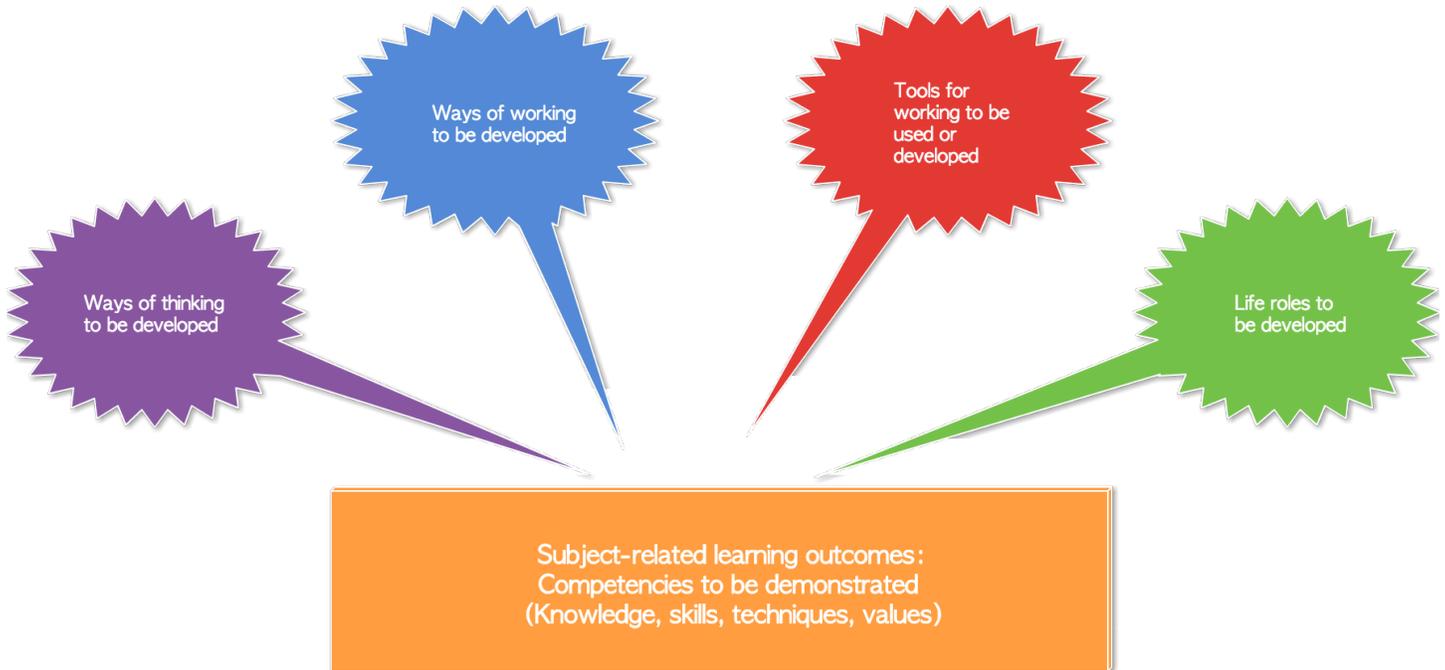
The assignments were well scaffolded and when I reflected back on the learning process, I clearly saw how to integrate the different puzzle pieces together.

IDENTIFICATION OF CRITERIA FOR ASSESSMENT

The quality of teaching and learning is enhanced in all situations where the assessment methods that are used are clearly and explicitly leveraged by, or developed out of, a set of values and beliefs about learning and teaching, which themselves are the focus for dialogue and enquiry in both classroom lessons and other learning contexts (James and Pedder 2006). In order to meet the needs of the summative system, the first versions of assignments were submitted via the online submission system to be graded. In South Africa, the state requires proof of students being actively involved in tertiary education.

Unisa requires that students submit one or more assignments during the course of the year to accumulate a year mark that may count a small percentage of the final mark. Students, registered for this module, previously submitted one compulsory assignment to accumulate a year mark contributing 20% to the final mark. The other three assignments could be submitted, but a large percentage of the students did not submit the non-compulsory assignments. Such a lack of self-regulation could have a negative impact on eportfolio development, therefore 14 compulsory assignments focusing on smaller amounts of work were designed to allow for deeper learning. The year mark was increased to 49% of the final mark to motivate students to submit their assignments.

Fig. 4: Outcomes to be addressed when designing subject-related assessment tasks.



DESIGN GUIDELINES FOR COMPILING EPORTFOLIOS

ePortfolios provide opportunities to demonstrate knowledge skills, values, and/or achievements, and also to reflect or articulate the relevance, credibility, and meaning of the artefacts represented (Cooper and Love 2007). According to Barret (2000) the development of an eportfolio usually covers the same stages of multimedia development, namely:

- Decide/assess: determining needs, goals, audience for presentation
- Design/plan: determining content, sequence of presentation
- Develop: gather and organize multimedia material to be included in the presentation
- Implement: Submit the eportfolio
- Evaluation: evaluate effectiveness.

ePortfolios can also support peer-learning. In the Mahara-eportfolio system a group function is used to provide opportunities for collaboration and communication and the comment function for giving and receiving peer feedback. The students were guided step-by-step towards compiling eportfolios that demonstrate their achievements towards key competencies such

as self-management and teamwork. The presence of individualistic and competitive learners could impact negatively on peer review; therefore, a strategy was used to develop cooperative learners.

COOPERATIVE BASE GROUPS AS STRATEGY TO DEVELOP COOPERATIVE LEARNERS

Teams and units can generate more profit than solitary workers (Rousseau, Aubé, and Savoie 2006); therefore, educational institutions are responsible for teaching students how to work effectively in groups (Devece et al. 2015). In order to assist students in this regard, cooperative base groups (Johnson, Johnson, and Holubec 2008) were created to develop cooperative learners. Traditionally, distance education does not provide for informal learning. Therefore, I made my privately owned informal social networking site available to provide a space where cooperative base groups could meet. The students were divided in small groups of five, with only three responsibilities, namely to:

- encourage one another
- keep one another responsible for learning, and to
- support one another in the completion of tasks.

Table 3: An integrative approach to learning tasks.

<i>Key competencies</i>	<i>Learning outcome: To be able to use technologies to support teaching and learning</i>
<i>Ways of thinking</i>	How would you use a Wiki to improve teaching or learning?
<i>Ways of working</i>	As a group, use the wiki of the learning management system (myUnisa) to create a knowledge base about instructional media.
<i>Tools for working</i>	Create a wiki for the subject-specific content you are teaching (can be your field of specialization)
<i>Living in the world</i>	Create a wiki to guide future students towards using the Mahara eportfolio system.

The informal learning space provided was effective, the student reflects:

It added learning that happened outside the traditional formal environment.

The eportfolios were developed during the following phase.

PHASE 3: FACILITATION OF THE DEVELOPMENT OF EPORTFOLIOS

During the third phase, the eportfolios were developed. Various teaching, learning, and assessment techniques were integrated to facilitate the process (See Figure 5 on page 46). The following steps were designed to facilitate a meaningful integration of eportfolios.

STEP 1: DESIGN PERSONAL LEARNING PLANS

ePortfolios provide students with opportunities to create personalized learning routes, known as ‘just-for-me’ education (Jochems, van Merriëboer, and Koper 2004), therefore, students can be required to form and conduct life plans (Rychen and Salganik 2003).

Unisa’s model for open distance learning is based on the assumption that students are self-regulated. However, due to high failure rates, such an assumption can be questioned. All assignments, guidelines and criteria were provided or specified in the study manual the students

received during enrollment. Due dates were set for first drafts of all the assignments, peer reviews and final submission of eportfolios. The students were required to use this information and the planning tool of the eportfolio system to create learning plans, and to keep it up to date (See Figure 6, page 47) in order to develop self-regulation skills. Figure 6 shows that the student used the planning tool not only to plan the submission of her assignments (right), but also to work through the study material (right).

STEP 2: COMPLETE THE ASSIGNMENT

The students were required to communicate with one another while they were completing their assignments. The forum function of the learning management system provided a space for formal discussions. The student reflects:

Over six months we discussed six topics that were clearly related to the goals and outcomes of the course. This provided us with an opportunity to learn from the experiences and background of people from vastly different walks of life. It also involved the development of crucial but often overlooked soft skills. The most effective discussions were based on good communication, not just an individual rattling of their own opinion without acknowledging the other voices in the conversation. Those who responded and learned from each other had the most to offer and the most to gain.

It was assumed that the students would continuously need help with the eportfolio system. It was also assumed that it would flood my inbox with 78 similar emails, therefore all communication with regard to the eportfolio system was confined to the informal learning space. During the process, I could keep my finger on the pulse, while opportunities for informal, incidental and cooperative learning were created. This procedure reduced the volume of my inbox and their stress levels, while one of the students perceived me as 24/7 available. The need for such an informal space cannot be underestimated. The student argues:

Particularly in distance education, it can be challenging to create a community of learners, and it is common to feel isolated in the learning process. A variety of information and communication technology can be implemented to connect learners and allow an online community to be created.

STEP 3: SUBMIT ASSIGNMENTS FOR SUMMATIVE ASSESSMENT

First drafts of assignments were submitted via the

online submission system since it is effective for scoring assignments. Scoring and grading command the attention of students, but it is insufficient for reporting on the development of competencies that provide a basis for lifelong learning, personal growth, critical creative thinking and aesthetic appreciation (Carmichael and Stacy 2006). Formative assessment is an ongoing process of seeking and interpreting evidence that can be used by students and their lecturers to determine the quality of learning, how it can be improved and the best method to improve learning (Assessment Reform Group 2002). Formative assessment is at the core of the learning process, yet it is often not used to its full potential (Carless 2007 57).

Carless (2007 65) argues that feedback promotes action and involvement in own learning, supports collaborative engagement between lecturer and student during the assessment processes, and can promote current and future learning. Although feedback can tax resources such as lecturers' time, expertise, cost and learning time of students (McTighe and O'Connor 2005), feedback cannot be neglected. If constructive, feedback creates methods and means of learning, motivates learning and provides

Fig. 5: Integrated strategy to facilitate eportfolio development.

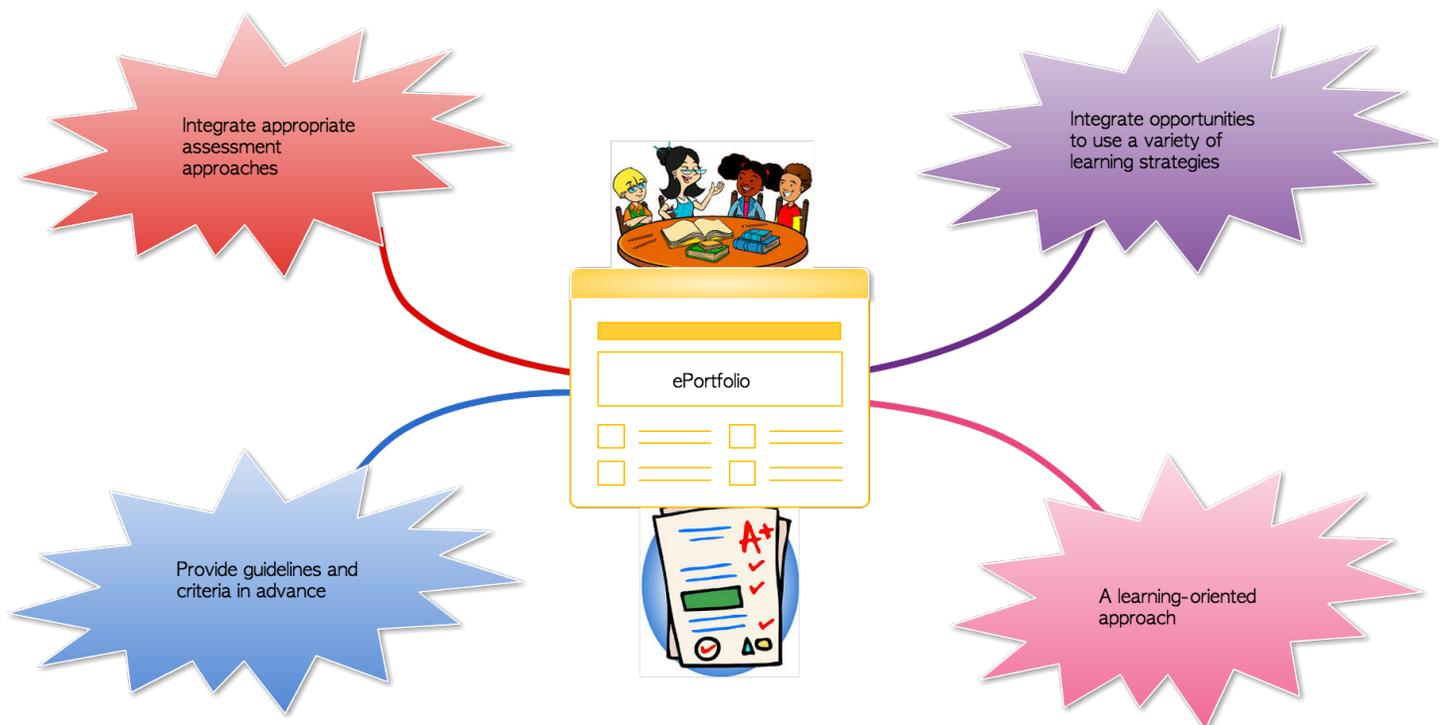


Fig. 6: A completed learning plan.

The image shows two screenshots from a learning management system. The left screenshot is titled 'INTMAEU Unit Completion 2015' and lists ten units, each with a completion date from February to March 2015. The right screenshot is titled 'Assessment Plan' and lists nine assignments with completion dates from April to September 2015. Both lists include a checkmark icon and a dropdown arrow for each item.

opportunities for ‘just-in-time’ learning and ‘just-for-me’ education (Jochems, van Merriëboer, and Koper 2004). The pace of each student’s development may be influenced by factors such as prior experience, sense of self in the world and cognitive capacity (Australian Curriculum Assessment and Reporting Authority 2013). Being able to improve the quality of work is a meaningful way to engage lecturers and students in outcomes-based education (Buzzetto-More 2010, 61). This learning-oriented approach had a lasting impression on the student, who reflects:

This cemented my view that assessment should be primarily used to establish what skills and knowledge students have achieved, and what still needs to be developed.

STEP 4: CREATE A PAGE

The students were required to create a page for each assignment, where they had to upload the following:

- assessed assignment
- improved assignment
- images, videos, and other resources used during the learning process
- reflective blog

Each page had to be submitted for peer review.

STEP 5: IMPROVE PAGES

It has been found that regular feedback enhances success, despite competing demands on a student’s time (Tochel et al. 2009). Therefore, the students were required to use peer reviews to improve their work, if necessary.

STEP 6: REFLECT ON THE LEARNING JOURNEY (EACH ASSIGNMENT)

Tochel, Haig, Hesketh, Cadzow, Beggs and Peacock (2009) found that eportfolios encouraged reflection and improved voluntarily time spent on developing portfolios. Deep learning can be encouraged (Barrett, 2004) when students are required to reflect on the relevance, credibility, and meaning of the artifacts they have presented (Cooper & Love, 2007). According to the student:

The self-assessment test allowed me to reflect critically on my learning journey and to integrate past, present and potential future learning. In addition to this, I was able to connect the different aspect of my learning experience together, particular the learning that has taken place outside of the traditional formal environment.

James and Pedder (2006), contended that authentic assessment for learning is grounded in the sustained and critical reflection of lecturers and students with regard to their achievements. A dialogue about learning can be stimulated when lecturers and peers provide feedback engendering further action and reflection on the part of the learner. The students were required to reflect on the artifacts presented for each assignment. The student states:

I am a reflective learner, and the structured way we were taught to reflect on our lessons was very appealing.

PHASE 4: PEER ASSESSMENT OF EPORTFOLIOS

Carless (2007, 65) postulated that students should be actively involved in the assessment process to exemplify their evaluative skills. Therefore, the students were required to review the eportfolios of their peers. By sharing thinking, visualizing, innovation, and giving and receiving feedback, students learn to value the diversity of learning and communication styles (Australian Curriculum Assessment and Reporting Authority 2013). In this regard, James and Pedder (James and Pedder 2006) argued that students can be helped to develop their own and one another's increasing independence in explicit and interactive processes. Therefore, the students were required to implement feedback from peers and write a final reflection. According to the student:

Peer review is an essential skill to be developed, it is the foundation of the academic environment and every field requires rigorous and robust peer review to ensure materials developed are valid and trustworthy. Fostering an environment in which students can practice these skills is a valuable task.

PHASE 5: FINAL ASSESSMENT

Due to the needs of our summative assessment system, the final mark was calculated as follows:

- 49%: Year mark, assessed assignments
- 51%: ePortfolio, displaying achievements, improvements, learning, and development.

As stated previously, I was not involved in the final assessment of the eportfolios. Therefore, I cannot report on pass rates, completion rates or student success. However, I do believe that the reporting system need to be revised.

PHASE 6: REPORT

Currently, the final mark is reported as a percentage. Such a reporting system does not do justice to the learning that happened during the course of the year. The eportfolio discussed in this paper serves as example. From the start, her assignments were in a league of its own. The eportfolio she developed within this learning-oriented framework, portrays learning, growth, and achievements towards almost every single key competency as illustrated in the discussions. The question that needs to be answered is: "How do a percentage on a report card do justice to the learning journey portrayed in this eportfolio?"

I am suggesting an alternative reporting system. The final mark can consist of the marks for assignments and improved assignments (100%). A scale, similar to the one used for reporting on doctoral studies in South Africa, can be used to report on level of development of key competencies, for example:

- Did not meet standards (incomplete eportfolio, substandard assignments)
- Revision needed, resubmit
- Met standards
- Cum Laude

Such an approach can improve the relevance of distance tertiary education, since potential employers can be provided with valuable information with regard to readiness to enter the working environment. The value of the learning-oriented approach will be discussed in the following section.

EPORTFOLIOS AS HIGH-IMPACT PRACTICES

The learning-oriented approach provided the student with ample opportunities to demonstrate achievements towards learning outcomes and her disposition towards continuing development. Based on the eportfolio presented, it was clear that the student participated actively throughout the process. Her work reflected her

autonomy, thoughtfulness, cooperative skills, learning strategies and responsibility as a learner. During the process, she developed into a confident graduate, equipped with the knowledge, skills, and techniques to be

During the process, she developed into a confident graduate, equipped with the knowledge, skills, and techniques to be an effective educator.

an effective educator. In this section, the focus is placed on the key competencies that developed as spinoffs during the course of the year.

ePORTFOLIOS AS METHOD TO DEMONSTRATE WAYS OF THINKING

Higher education has the responsibility to develop higher order thinking skills such as critical thinking, problem-solving, the ability to plan and realize innovative projects, and a competency for systemic thinking (Devece et al. 2015, Rieckmann 2010). Developing these thinking skills requires logic and imagination, reflection on the way issues, tasks and challenges are tackled best, increased ability to select from a range of thinking strategies and the ability to employ them selectively and spontaneously in an increasing range of learning contexts (Australian Curriculum Assessment and Reporting Authority (2013). The learning-oriented framework provided the student with opportunities to demonstrate higher order thinking skills.

Creative and critical thinking skills can be developed when students are required to interpret, analyze, evaluate, explain, sequence, reason, compare, question, infer, hypothesize, appraise, test and generalize (Australian Curriculum Assessment and Reporting Authority 2013). Creative thinking includes generating new ideas, applying new ideas in specific contexts, the ability to see existing situations in new ways, identifying alternative explanations, and making new links to generate a positive outcome (Australian Curriculum Assessment and Reporting Authority 2013). Therefore, dispositions such as inquisitiveness, reasonableness, intellectual

flexibility, open- and fairmindedness, readiness to try new ways of doing things or considering alternatives, and persistence are both promoted and enhanced by critical and creative thinking (Australian Curriculum Assessment and Reporting Authority 2013). The learning-oriented framework allowed the student to demonstrate both creative and critical thinking skills.

‘Learning’ refers to the mental activity that helps us compare, contrast and classify ideas, objects, and events, whether they are concrete or abstract. Rote-learning does not provide opportunities to take ownership of own learning, to engage in higher order thinking, and to reflectively apply lessons learnt in our daily lives (Tan 2015). Learning is promoted when students are engaged in solving real life problems (Merrill 2002, 45), therefore authentic learning tasks can be designed to develop problem solving skills. Learning is allied with metacognition (Australian Curriculum Assessment and Reporting Authority 2013), or the ability to think about one’s own thinking. Deneen and Schroff (2014) found emerging evidence that eportfolios may contribute to the development of high-value outcomes such as metacognition, a competency closely related to early career success. The learning-oriented framework allowed the student to demonstrate her metacognitive skills. According to the student:

The self-reflective blog has been the best aspect of this module. I have a personal preference for the principles of experiential learning, which propose that learning occurs through experience. Specifically learning through reflection on doing. It is not enough to have the learning experience alone; it is also necessary to reflect on the experience. This is an active process in which learners incorporate what was learned. Writing these reflections on my learning experience, has enabled me to clearly integrate the knowledge and skills developed.

ePORTFOLIOS AS METHOD TO DEMONSTRATE WAYS OF WORKING

The learning-oriented framework allowed the student to portray herself as a self-manager. She justified her placement of the reflective blogs on each page as follows:

Although I wrote the reflective blogs at the end of

each assignment, I started each page of the collection with the relevant reflective blog in order to orient the assignment.

The ability to plan, organize and manage oneself in a responsible and effective manner (Australian Chamber of Commerce and Industry & Business Council of Australia 2002) is regarded as an important 21st century skill. The complexities of real life does not allow for problem-solving processes which go strictly according to plan, therefore the capability to organize actions in a creative way (Rieckmann 2010) needs to be developed. The eportfolio provided opportunities to develop interrelated key competencies such as problems-solving skills, analytic capabilities, and judgement and decision making skills.

The learning-oriented framework allowed the student to demonstrate her ability to communicate effectively in oral, written and visual modes. This ability is integral to each of the thinking processes (Devece et al. 2015). The ability to use media (Rieckmann 2010) and information and communication technology effectively to communicate language, symbols and text, knowledge, information and communication technology interactively, is regarded as a key competency (Rychen and Salganik 2003). An overview of the eportfolio the student compiled during the course of a year, demonstrates the level of achievement towards this ability. Instead of an overreliance on text, she also visually demonstrated her knowledge, skills, abilities and techniques. She justifies the use of mind maps and word clouds as follows:

Mind maps are one of the my most often used techniques when planning, and I used Coggle to design a neat version of my planning process.

After the assignments, I included a word cloud which I created with Wordle.

When they were required to create PowerPoint presentations, she converted the presentation into a video clip and shared it on her blog. According to the student, these skills are valuable in the future since she realized the importance of using a variety of media in the classroom.

The learning-oriented framework allowed the student to demonstrate her collaborative working skills. The ability to work effectively in groups relates well with other abilities such as the ability to cooperate (Rieckmann 2010), manage, resolve conflicts (Rychen and Salganik 2003) and work effectively in teams (Devece et al. 2015) – abilities regarded as a 21st century employability skills (Australian

Chamber of Commerce and Industry & Business Council of Australia 2002). The growing importance of teamwork in organizations responds to an increasingly competitive, ever-changing environment (Devece et al. 2015). Therefore, management often seeks to employ graduates who boast not only solid knowledge in a specific field, but also the capacity to collaborate and combine this knowledge with other employees in demanding and stressful circumstances (Devece et al. 2015). It is not sufficient to provide opportunities; according to the student the process should be facilitated:

Learning in collaborative projects has the potential to be better than any project students could come up on their own, but more facilitation and moderation could improve the projects.

EPORTFOLIOS AS METHOD TO DEMONSTRATE USE OF TOOLS FOR WORKING

The ability to use of technology effectively and interactively is regarded as a 21st century employability skill (Australian Chamber of Commerce and Industry & Business Council of Australia 2002; Rychen and Salganik 2003). Based on the reflective video presentation, the learning-oriented framework provided the student with ample opportunities to demonstrate her ability to use technologies effectively and interactively. In the process, she was enabled to display a richer picture of their abilities and personal growth during the course of the year. One of the assignments required of the students to explore new technologies that can be used in the classroom. The student reflects on the need to integrate technology in higher education, and the challenges associated with it:

This assignment made me realize how important it is to use a variety of media in the classroom. I have taught in various contexts, and access to technology has created vastly different learning environments. This assignment in particular allowed me to reflect on how technology can be used to revolutionize education and our access to information, which can transform our lives. We must consider ways to reduce the ever-increasing digital divide and how to use technology to build these bridges.

EPORTFOLIOS AS METHOD TO DEMONSTRATE

WAYS OF LIVING IN THE WORLD

The 21st century is characterized by increasing individualization and growing societal diversity, availability of a rapidly growing amount of information and the necessity to cope with increasing complexity and uncertainties (Rieckmann 2010). Therefore, more students must develop the ability to use intellectual, personal and social resources to participate as active citizens, contribute to economic development and flourish as individuals in a diverse and changing society (James and Pollard 2011). Students of the University of Maryland reported that they were able to show their eportfolios to potential employers (76%), that the eportfolios encouraged them to develop organizational skills (83%) and to showcase their talents (89%); therefore, the authors postulated that eportfolios can help students to see how course work relates to real world practice (Buzzetto-More 2010). The learning-oriented framework allowed the student discussed in the paper to develop an eportfolio that can be used for job application purposes.

CONCLUSION

ePortfolios can develop into high impact practices, if done well (Eynon and Gambino 2017). In conclusion, the voice of the student is used to substantiate the need to develop eportfolios that can be regarded as a high impact practice. Firstly, the research shows that eportfolios can develop into high impact practices in distance education, if the focus is on learning and development. After being exposed simultaneously to the integration of eportfolios in a module (this module) and the traditional formal examination (other modules), the student is in the best position to make a judgment:

In addition to academic work I have completed for this module, I can demonstrate the skills necessary to integrate technology and media effectively as well as the ability to employ a variety of learning theories, instructional methods, and assessment tools in the planning, implementing and evaluating of my lessons.

Secondly, the research shows that eportfolios can develop into high impact practices, if assessment processes are more continuous, frequent, criterion-based, and developmental (Chertoff 2015). After being exposed to a learning-oriented approach to eportfolio development,

the student reflects:

An eportfolio is truly the best way to combine media and instruction. The diploma I have received is valuable, but what is more important is the ability to do something practical. If I had merely regurgitated the text book in parrot fashion in the exam, I would have a degree, but no skills.

Thirdly, the research shows that eportfolios can develop into high impact practices, if assessments are valid, reliable, practical and have an impact on teaching, learning and students' motivation for learning (Assessment Reform Group 2002; Knight 2002; Carless 2007 57). Based on the email accompanying the video-clip shared, the learning-

I do not think about old essays as much once they're done, but with the eportfolios I reflect, revise, and improve at every step

oriented approach to eportfolio development made a lasting impression on the student, since she wrote:

I hope it doesn't sound boastful, but I feel proud of my portfolio. Last year, I was a bit tired of everything by the end. But after looking at it with fresh eyes, I can see that I came a long way. My first assignments were a lot weaker than the improved versions. I don't think about old essays as much once they're done, but with the eportfolio I reflect, revise, and improve at every step.

Lastly, the research shows that eportfolios can develop into high impact practices, if integrated within a learning-oriented framework. This student used the eportfolio system effectively to demonstrate achievements towards learning outcomes, as well as Critical Crossfield and Developmental Outcomes. The student introduced her eportfolio as follows:

Completing the Instructional Techniques and Multimedia module was a lot like piecing together a jig saw puzzle. At first, everything was a jumble of vaguely connected colors and shapes. As I worked

through the material however, I began to recognize the patterns and how the different aspects of the course connected into an integrated whole. This eportfolio showcases my learning journey and is a powerful way to demonstrate my ability to fuse instructional techniques and media.

The eportfolio, developed within the learning-oriented framework, suggests that eportfolios can be regarded as high-impact practices, if learning tasks are designed, students are actively involved in self- and peer assessment and feedback promotes current and future learning. The framework was tested in practice, yielded success, but I did not complete the journey with the students. Therefore, I cannot evaluate the framework. It needs to be tested and refined in more contexts to understand how this framework can support the development of eportfolios that can be regarded as high-impact practices. For access to the eportfolio showcased, please contact me.

CLOSING REMARK

While I was involved, I had to continuously remind the students that learning is not a race, it is a journey. The destination is pre-determined, but you have to pause to reflect on your own learning journey to identify skills, techniques and knowledge needed to complete the race to your own gratification.

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What I really learned in college:

Holistic learning portfolios in a residential liberal arts setting

by MICHAEL EGAN

edited by CHRISTA VAN STADEN

*And then into the world we come,
Fol de rol de rol rol rol!
We've made good friends, and studied—some.
Fol de rol de rol rol rol!
-Lyrics from “Eli Yale,” a traditional Yale song*

At a recent on-campus meeting of Augustana College’s Board of Trustees, I presented a poster related to the ePortfolio work described in this article. I asked each trustee a single question to break the ice when they visited my poster: what were some of the most important things you learned during college? A clear pattern emerged from their responses: the lessons that “stuck” had nothing to do with academic content. My visitors cited life lessons such as collaborative skills developed through athletics or ensembles, social skills developed through friendships and diverse encounters, and an appreciation for mentorship that developed via close engagement with teachers and advisors.

These comments are likely unsurprising to other graduates of residential, four-year colleges and universities. Indeed, Astin’s extensive study of factors influencing traditional

undergraduates’ learning provided convincing empirical evidence that peer-to-peer relationships and other affective elements are the most powerful predictors of retention and academic success (Astin 1993). The intuitively obvious idea that students learn important lessons throughout their entire college experience, not just in the classroom, is captured in the concept of *lifewide* learning (Chen 2009).

The lifewide learning construct acknowledges that students learn valuable lessons in both formal settings (in classrooms, through academic work, etc.) and informal settings (though social clubs, athletics, residential life, etc.). Colleges and universities have a long history of measuring and assigning value to evidence of formal learning via course grades, graduation requirements, etc. Institutions of higher education are just now starting to find ways of

documenting and evaluating informal learning, and the ePortfolio is a promising tool in this effort (Wankel and Wankel 2016). Over the past five years, Augustana College has committed to formally acknowledging and articulating the lifewide (or, at least, college-wide) learning our students experience.

This process began in 2012 when our faculty approved a set of nine college-wide learning outcomes. The outcomes served as a pledge to our current and prospective students that they would develop in relation to each of these nine important and transferable areas, regardless of their chosen major or collegiate commitments. Furthermore, the outcomes were built on the assumption that this development would occur via engagement with the holistic college experience. That is, students would grow relative to the learning outcomes through their academic, residential, social, athletic, artistic, employment, and other collegiate involvements. The campus community's commitment to formally recognizing informal learning was deepened in 2014 through the implementation of the *Augustana 2020* strategic plan.

The pilot demonstrated the usefulness of ePortfolios for our purposes, and the faculty recently approved ePortfolio construction as part of the regular curriculum

The first plank of the plan pledged that our institution would enhance students' career and vocational preparation, while the second plank undergirded the first plank with specific plans for how a holistic, integrated college experience would launch our students into successful futures:

[Augustana will] connect the distinctive aspects and outcomes of an integrated residential college experience to what is most valuable for success in life after college by ensuring that all students combine an individualized set of curricular, co- and extra-curricular experiences that maximizes their educational development and success in college and provides superior preparation for life after college (Augustana College 2014).

Of course, this vision of what our campus can provide demands an assessment strategy. If different students will demonstrate the learning outcomes in different ways, how can we collect evidence that each student really is growing with respect to the outcomes? How will we know that our graduates can articulate the insights and skills gained through their various collegiate commitments to employers and graduate schools? Can we track students' ability to draw integrative connections across learning experiences and to abstract principles from these experiences that might be applied in future situations? We have turned to ePortfolios as one tool for gathering data related to these questions.

Our use of ePortfolios began with a two-year pilot project spanning the 2014-2015 and 2015-2016 academic years. The pilot demonstrated the usefulness of ePortfolios for our purposes, and the faculty recently approved ePortfolio construction as part of the regular curriculum effective 2016-2017. This paper shares how ePortfolios might be used to document and assess students' holistic college experience.

The next section includes a review of the literature that has informed Augustana's work with ePortfolios, highlighting ePortfolio scholarship related to learning outcomes, assessment, integration of student learning, and career preparation. Subsequent sections focus on the specifics of Augustana's ePortfolio approach. This will include descriptions of how our students design and build their ePortfolios, samples of student work, indications of how faculty and staff have assessed them, and data derived from the project.

EPORTFOLIOS AS LEARNING REPOSITORIES AND CAREER LAUNCHING PADS: A LITERATURE REVIEW

Since the turn of the century, colleges and universities have steadily moved from an input-centered model of education (where the value of a student's education is judged on the quantity and breadth of courses s/he completes) toward an outcomes-centered model (where educational quality is judged by the knowledge, skills and dispositions students develop as a result of their education). The Association of American Colleges and

Universities (AAC&U) has worked at the forefront of the learning outcomes movement, publishing influential guidelines for the kinds of learning outcomes all college graduates should obtain.

EPORTFOLIOS AND AAC&U LEARNING OUTCOMES

The AAC&U recommended learning outcomes are intentionally broad and generic, thus allowing for institutions to mold the specific goals of their local outcomes to their particular missions. Still, if a tertiary degree in the U.S. is to mean anything, all college graduates must possess certain forms of knowledge.

Evidence of learning that students post to their ePortfolios will vary widely depending on the experiences and expertise of the students.

The AAC&U recommends that these forms include knowledge of society and natural science, widely applicable skills such as communication and quantitative reasoning, and dispositions focused on individual and civic responsibility. The AAC&U emphasizes that these outcomes can and must be fostered across the full spectrum of institutional types and courses of study. Furthermore, development of these learning outcomes is not confined to formal classrooms, but “should be fostered across the entire educational experience” which includes co- and extra-curricular programs (AAC&U 2007). Such generic learning outcomes will be exhibited in different ways by different students having different experiences at different institutions, therefore they demand a flexible mechanism for demonstration and assessment.

Many institutions have turned to ePortfolios as a tool for students to demonstrate a variety of qualitative learning outcomes. Matthews-DeNatale provides a framework for how ePortfolios are used across institutions. This includes:

- “documentation or directed portfolios” through

which students upload particular artifacts of work that were intended to align to specific competencies,

- “developmental portfolios” through which students archive and reflect on samples of work over time in order to make their developmental growth visible, and
- “showcase portfolios” that are designed to show students’ culminating work or the most polished examples of their competence relative to given outcomes (Matthews-DeNatale 2014).

Just as ePortfolios allow for different assessment goals (documentation, formative, or summative), they also provide a canvas for unique institutional cultures to become visible. Bass notes that “ePortfolios provide an unparalleled means for leveraging the impact of local high-impact educational practices and making visible the distinctive educational contributions of faculty, place, and the local community” (Bass 2014).

EPORTFOLIOS AND ASSESSMENT

Typically, the evidence of learning that students post to their ePortfolios will vary widely depending on the experiences and expertise of the students. For example, for a learning outcome such as “civic engagement,” one student might post an essay written for a political science class, another might post video of a speech she delivered at a campus rally, while another might post a piece of artwork he created that conveys a social message. Certainly each of these artifacts could potentially provide strong evidence of knowledge and dispositions related to civic engagement, and hence this fictional example illustrates the major challenge of assessing student ePortfolios.

How can faculty assess distinctive samples of work aligned to the same learning outcome in a consistent and fair way? Clearly the qualitative nature of ePortfolios requires a qualitative assessment instrument, and hence rubrics have been used extensively for ePortfolio assessment across the country. The AAC&U VALUE rubrics are a promising starting point, as these rubrics are aligned to the AAC&U’s essential learning outcomes (AAC&U 2007). Many institutions across the country have crafted locally appropriate rubrics influenced by the VALUE rubric language (Kahn 2014).

Ambrose et al. provide a helpful description of the rubric-building and rubric-using process at their institution, the University of Notre Dame. Their ePortfolio work

focuses on the learning experiences of first-year students. Their team began by identifying the target learning outcomes for this population, then a committee built preliminary rubrics describing their best guess of the various kinds and qualities of student work they expected to see in the ePortfolios. The committee collected a sample of ePortfolios and tested the preliminary rubrics by using them to assess the sample. The experience of using these rubrics on actual student work enabled them to uncover shortcomings of the rubrics and hence refine them. Working with refined rubrics, another sample was collected, and the committee performed double blind reviews of student work with the updated rubrics. The assessment data generated with the refined rubrics were then used to inform the first year program of areas of strength, need, and possible refinement. The refined program then led to updated learning outcomes, launching a renewed cycle of the rubric and programmatic development (Ambrose, Martin and Page Jr. 2014). ePortfolio assessment work at other institutions likewise suggests that a continual assessment cycle such as the one used at Notre Dame constitutes effective practice (Arcario, et al. 2013, Gambino 2014).

An ePortfolio becomes a powerful medium for expressing and assessing integrative learning when instructors are purposeful

EPORTFOLIOS AND INTEGRATION OF KNOWLEDGE, SKILLS, AND DISPOSITIONS

Just as an ePortfolio is a useful tool for documenting and assessing individual student outcomes, it can also be an effective avenue for tracking students' ability to integrate knowledge, skills and dispositions that cut across outcomes. Huber and colleagues note that a student's "capacity for integrative learning – for connection making – has come to be recognized as an important learning outcome in its own right, not simply a hoped-for consequence of the mix of experiences that constitute undergraduate education" (Huber, Hutchings and Gale 2005). Indeed, the AAC&U lists integration of learning as one of its essential learning outcomes, and integration is synonymous with "synthesis," a mark of higher order

thinking in Bloom's taxonomy (AAC&U 2007).

An ePortfolio becomes a powerful medium for expressing and assessing integrative learning when instructors are purposeful about using it in this way. That is, an ePortfolio design that moves beyond the documentation model (Matthews-DeNatale 2014) and instead prompts students to abstract principles that cut across experiences can effectively promote this sophisticated cognitive skill (Reynolds and Patton 2014). In addition to being a valued academic outcome, the skills involved in knowledge integration are also sought after in the 21st century workplace (AAC&U 2015, Clark and Eynon 2009).

EPORTFOLIOS AND CAREER-ORIENTED BENEFITS

Promoting the ability to integrate knowledge is not the only career-oriented benefit of ePortfolio construction. Artifacts of work showcased in portfolios, along with application letters/essays, interview impressions, etc., can serve as difference-makers in the job and graduate school application process (Whitworth, et al. 2011). The electronic portfolio, specifically, has clear advantages over its paper-based predecessor given the variety of media it can display and the ease with which it can be sent and shared (Goldsmith 2007). Not all employers will take the time to review a candidate's ePortfolio (Wetzel and Strudler 2006), but the process of building an ePortfolio can still be beneficial to the job seeker. ePortfolio creation leads students to reflect on their collective knowledge and experiences and then be able to communicate a coherent narrative about their skill set to prospective employers and/or graduate school admissions officers (Boody 2009). Hence, students that have constructed ePortfolios tend to be well prepared to write application letters/essays and to engage in interviews.

REFLECTING ON COLLEGE AND PREPARING FOR THE FUTURE: AUGUSTANA'S EPORTFOLIO PROJECT

Augustana's recent ePortfolio pilot was ambitious in scope. We hoped to harness the tool for each of the purposes laid out in the previous section: to document and assess our college-wide learning outcomes, to provide a space where students could integrate insights drawn from all aspects of their college experience, and, thus, to put

Table 1: Augustana College's Learning Outcomes (LOs)

Intellectual Sophistication	1. Disciplinary Knowledge. Understand: Demonstrate an extended knowledge of at least one specific discipline and its interdisciplinary connections to the liberal arts, reflected in the ability to address issues or challenges and contribute to the field.
	2. Critical Thinking and Information Literacy. Analyze: Critique and construct arguments. This requires the ability to raise vital questions, formulate well-defined problems, recognize underlying assumptions, gather evidence in an efficient, ethical and legal manner, suspend judgment while gathering evidence, evaluate the integrity and utility of potential evidence, critique and incorporate other plausible perspectives, and determine a reasonable conclusion based upon the available evidence.
	3. Quantitative Literacy. Interpret: Interpret, represent and summarize information in a variety of modes (symbolic, graphical, numerical and verbal) presented in mathematical and statistical models; use mathematical and statistical methods to solve problems, and recognize the limitations of these methods.
Interpersonal Maturity	4. Collaborative Leadership. Lead: Collaborate and innovate, build and sustain productive relationships, exercise good judgment based on the information at hand when making decisions, and act for the good of the community.
	5. Intercultural Competency. Relate: Demonstrate an awareness of similarity and difference across cultural groups, exhibit sensitivity to the implications of real and imaginary similarities and differences, employ diverse perspectives in understanding issues and interacting with others, and appreciate diverse cultural values.
	6. Communication Competency. Communicate: Read and listen carefully, and express ideas through written or spoken means in a manner most appropriate and effective to the audience and context
Intellectual Sophistication	7. Creative Thinking. Create: Synthesize existing ideas, images or expertise so they are expressed in original, imaginative ways in order to solve problems and reconcile disparate ideas, and to challenge and extend current understanding.
	8. Ethical Citizenship. Respond: Examine and embrace strengths, gifts, passions and values. Behave responsibly toward self, others and our world; develop ethical convictions and act upon them; show concern for issues that transcend one's own interests, and participate effectively in civic life.
	9. Intellectual Curiosity. Wonder: Cultivate a life-long engagement in intellectual growth, take responsibility for learning, and exhibit intellectual honesty.

students in a better position to articulate their skills and passions to prospective employers. If the pilot was ambitious in scope, it was small in scale. A total of 33 volunteer students participated in the pilot, and their year-long ePortfolio-building process was guided by 14 volunteers from the faculty and staff. This section chronicles how the ePortfolios were designed and constructed, how they were assessed, key data we took away from the pilot, and an indication of our plans for moving forward.

DESIGN, CONSTRUCTION, AND SAMPLES OF WORK

Augustana's Learning Outcomes (LOs) provided the organizational framework for student ePortfolios. As shown in Table 1, Augustana has articulated nine qualitative LOs that can be further organized into three over-arching categories: Intellectual Sophistication, Interpersonal Maturity, and Intrapersonal Conviction. These LOs, approved by the faculty in 2012, rest on the assumptions that different students will exhibit this learning in different ways, and that all facets of student life can potentially contribute to a given student's development relative to the LOs. Within the ePortfolio pilot, this spirit of acknowledging college-wide learning was reflected in the makeup of the professionals serving as mentors to students as they constructed their portfolios. The 14 mentors in the project represented a wide cross-section of educators: 7 faculty members representing four different academic departments (Biology, Education, Mathematics, and Psychology), and 7 staff members drawn from offices such as Residence Life, Student Activities, Museums, and Academic Support Services.

Over the course of an academic year, students worked on two tasks:

1. developing a case for their competence relative to each LO, and
2. writing an Integrative Learning Statement, or an essay designed to tie together each student's most meaningful learning experiences and tell a coherent story about their college life.

Using free web-building tools such as Google sites and Wix, students approached the first task by building websites with pages devoted to each LO. For each LO webpage, students built their case by providing both

evidence of learning and arguments explaining why the evidence was reflective of that particular outcome. Mentors encouraged students to think broadly about what kinds of artifacts might serve as convincing evidence of a given outcome, and students responded by showcasing and reflecting on samples of work drawn from many sources (see the Institutional Lessons Learned section of this article for a fuller sense of the kinds of artifacts students posted). Focusing on the Collaborative Leadership outcome as an example, [one student](#) posted a group-generated class paper as evidence, [another](#) highlighted flyers and other publicity materials for various campus events he organized, and [still another](#) posted a video collage of a week at Camp Kesem ... the culmination of her year of effort organizing and fundraising so that the free camp for children affected by cancer could run without a hitch.

Our ePortfolio project did indeed provide an avenue for different students to demonstrate their learning in different ways.

As directed in our ePortfolio pilot, these students were aware that the artifacts could not stand alone. Each artifact was accompanied by a written reflection indicating why the student believed the artifact served as appropriate evidence of the Collaborative Leadership outcome. Our ePortfolio project did indeed provide an avenue for different students to demonstrate their learning in different ways. The brief sample shared in the previous paragraph included students with distinctive academic majors (English, mathematics, and communication respectively) and different campus involvements. Still, the onus was on each student to make a convincing case that he or she had developed competence relative to the given learning outcome. For a case to be convincing, both appropriate evidence and accompanying arguments are needed.

The Integrative Learning Statement (ILS) assignment prompted students to move beyond demonstrating competence relative to each of nine learning categories and instead share a coherent narrative tying together the

entire learning experience. The ILS is a reflective essay posted to the ePortfolio, usually on the home page. For any given student, the ILS would typically overlap with material in the LO webpages, but would not coincide completely. Students were explicitly instructed that the ILS need not incorporate all nine learning outcomes: forcing such breadth into any essay would be exceedingly challenging at best and a forced and meaningless exercise at worst.

The goal for the ILS was for students to tell a meaningful story about their college experience. Students were prompted to consider questions such as, “What are some key insights you have developed during college that cut across your various experiences? What are some overarching principles that apply to your academic and non-academic life, and how might these principles serve to guide your post-college life?” The LO webpage work had a set organizational structure – the nine learning outcomes – but the ILS was much more open-ended so as to allow different students to organize and express their holistic learning in unique ways. Some degree of overlap with the LO webpages was inevitable, as the material showcased in those pages was posted there precisely because it represented strong evidence of learning. When a student’s ILS included a reflection on a given learning experience that was also showcased in the LO webpages, students often incorporated hyperlinks from the ILS to the corresponding location(s) in the webpages. One example of a highly developed ILS is available [here](#).

The LO webpages provided evidence of our students’ competence relative to the college-wide learning outcomes, and the next section describes how we went about assessing this work. Having a source of data reflecting our learning outcomes is certainly useful to the institution. The ILS essays provided some evidence of students’ integration skills, but, more satisfactorily, they also provided indications that students recognize the importance of reflection and understand that the value of a liberal arts education extends beyond preparation for the world of work. The student-authored passages below are demonstrative:

K.D., CLASS OF 2015

“Isn’t it funny how day by day nothing changes, but when you look back, everything is different...” -C.S. Lewis

During freshman orientation, I remember Dr. Katz asking my peer advising group, “Who hopes to change within the next four years?” Every hand in the room shot up. Upon entering college, every freshman hopes for the next four years to be a transformative experience. Leaving home for the first time, we came to campus eager to gain knowledge and experiences that would leave us matured and prepared for adulthood. At least, this is the fantasy that we had as freshmen. We didn’t know how we would change, but we were sure it would happen— we were told this would be so. Nearly three years later, I find myself revisiting this same question. How have I changed? My time at Augustana is nearing an end, and what do I have to show for it? To be honest, I don’t feel changed. I don’t recall having a magical “ah-ha” moment where I knew that I instantly transformed into an adult. Yet, upon reflection, I know that I certainly have changed as a result of my experiences at Augustana. I am not the person I was three years ago; I have developed a deeper awareness and understanding of the world and myself in relation to it. Perception of growth is difficult because it is a gradual process. Who I am feels stable because as my skills rise, so do my expectations. Success always seems just out of reach because my goals are constantly growing. It is only upon taking a step back that I realize how much progress I have already made.

These lines served as the introduction to K.D.’s ILS, and in the remainder of the paper she went on to articulate the specific nature of her progress during her college years. The introductory comments, including the aptly chosen lead-in quotation, should warm the heart of any educator that tries to impart the value of reflection. One can infer from her words that the act of documenting and explaining her most significant learning experiences through the ePortfolio construction process enabled her to realize and appreciate the nature of her personal growth during the college years. Though our pilot project made no effort to track the degree to which the ePortfolio construction process enhanced students’ preparation for graduate school or careers, it still seems clear that a student such as K.D. would be well-prepared to address a generic interview question such as, “What did you learn in college, and how does that set you apart from other applicants?”

A liberal arts education should provide much more than job preparation, though, and many ILS essays revealed

that our students appreciate this. Two students expressed this as follows:

L.B. CLASS OF 2017

College students are often defined by their major in the same fashion that those in the workforce are defined by their careers. One of the most immediate questions hurled at us during family gatherings is, “What’s your major ...” followed swiftly by, “... and what do you want to do with that?” Generally, in order to quickly bypass this small talk, we curtly answer with our major and what career we hope to have in the future. This is a curious interaction because every single time those asking assume that this all there is to an education. They assume that there’s a major, a dream job, and that’s the end to who we are and what we do. In reality, I believe there is so much more to just finishing my major and obtaining my dream job, because I am also working towards the dream me, and it is through my education at Augustana College that I have been able to pinpoint my greatest callings in life and work towards achieving them. This is my vocation, what my Augustana education is teaching me to become – simply a better me.

The act of documenting and explaining her most significant learning experiences through the ePortfolio construction process enabled her to realize and appreciate the nature of her personal growth during the college years.

S.C. CLASS OF 2015

A friend and classmate of mine] delivered the student commencement speech at Augustana’s Class of 2014 graduation ceremony. I vaguely remember anybody else’s wise words from that day, but something he said has stuck with me. As he was closing his speech, he said to his fellow classmates:

“We are not machines; we are human beings who plunge head-first into a world of overwhelming possibility. I hope (in the future) that we’re doing nothing related to our majors. I hope we’re still adventuring and exploring, still creating our lives.”

When I first heard him say this, I was a little put off. If I do not enter a career in the field of my major then why did I go to college for it? It took a lot of time, reflection, and discernment for me to finally understand what Carlisle was really talking about that day. Augustana does not prepare its students up to take one path in life; it equips us with the skills, talents, and qualities to carve an eclectic path full of adventures and unknowns. We are taught to create our own opportunities, continually build inner wealth and give back to society.

The committee’s task was to first devise a set of evaluative criteria that would be used to assess student portfolios, and then to apply the criteria while reviewing the ePortfolios.

ASSESSMENT STRATEGY

Our ePortfolio project intentionally enabled students to express their learning in personalized ways. An example was shared earlier indicating how three different students demonstrated their competence relative to the “Collaborative Leadership” outcome. The evidentiary artifacts provided by each student were substantially different: a class paper, a collection of flyers, and a video collage. This situation led to a bit of an assessment conundrum: how does one judge the relative quality of different modes of expression?

During the first year of the pilot, an ePortfolio assessment committee convened to wrestle with this question. The committee was comprised of two faculty members (including the author), a librarian, a staff member from the Student Activities department, and a member of the college’s Board of Trustees. The eclectic mix of

individuals on the committee reflected the multifaceted goals of the ePortfolio project. Again, we wanted our students to showcase learning that occurred across the college experience, not just in the classroom. Hence the committee included representation from professionals within the classroom (faculty) and outside of the classroom (the librarian and the Student Activities representative). We also hoped that our students’ ePortfolio construction would enhance their ability to articulate their knowledge and skills to prospective employers and graduate schools, hence a trustee (an accountant) representing the “outside world” contributed to the committee as well.

The committee’s task was to first devise a set of evaluative criteria that would be used to assess student portfolios, and then to apply the criteria while reviewing the ePortfolios. Existing rubrics, primarily AAC&U VALUE rubrics but also rubrics developed at our own institution for written and oral communication, served as the starting point for our work. A mapping between these existing rubrics and our Learning Outcomes had been developed at the outset of the ePortfolio project (see Table 2). This mapping was shared with all participating students and mentors at the beginning so that they could have access to additional language about what the Learning Outcomes might mean.

As the committee began to compare the language in these rubrics against preliminary samples of student work, we began to agree that the rubrics themselves would not serve as efficient tools for judging student work. It was inevitable that assessing the ePortfolios would require subjective interpretation and judgment on the part of the reviewer, and we began to recognize that using multiple rubrics for multiple learning outcomes only served to increase the level of subjective interpretation. The rubrics themselves require interpretation, and hence the prospect of using 15 different rubrics only seemed to increase the likelihood that different reviewers would infer different ideas from each rubric.

The committee chose to simplify the process by crafting a single, generic rubric that would be used to assess each LO webpage and hence each individual learning outcome. The generic rubric articulated three chief criteria based on Bloom’s Taxonomy:

1. Knowledge and Understanding (that is, does the ePortfolio show that the student has reasonably interpreted the meaning of the learning outcome?),

2. Application and Analysis (does the student demonstrate the ability to apply this learning outcome in practice and argue with sophistication why samples of work reflect the outcome?), and
3. Evaluation and Creation (does the student demonstrate the ability to self-assess the quality of her/his own work and produce artifacts reflecting individualized creativity?).

Five levels of proficiency were articulated in the rubric for each of the three criteria. The rubrics listed in Table 2, though not used as evaluation instruments, were still utilized by the committee throughout the assessment process. The generic rubric we developed for scoring provided helpful evaluation guidelines, but did not provide specific language regarding what quality work for each learning outcome might resemble. So, for example, when assessing work related to “Ethical Citizenship,” the committee would turn to language from the Civic Engagement and Ethical Reasoning VALUE rubrics when judging if a given student’s work reflected Knowledge, Understanding, Application and Creation relative to Civic Engagement.

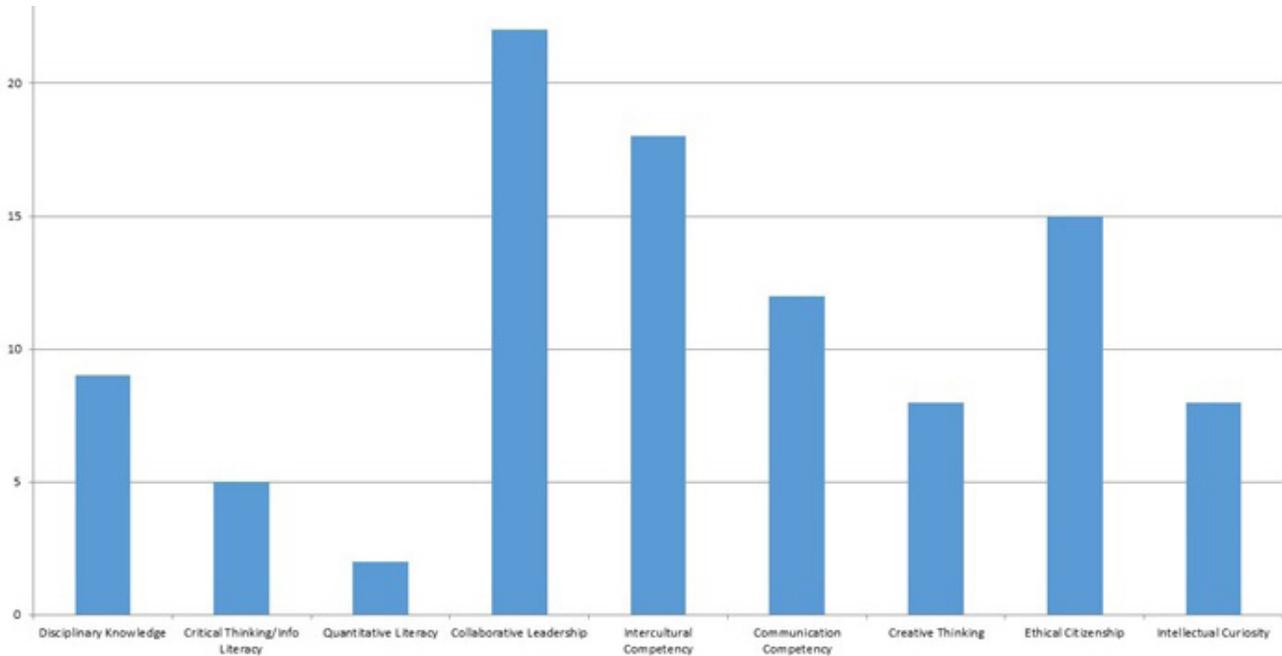
Our generic rubric, supported by language from the VALUE rubrics and existing Augustana rubrics, did not sidestep the issue of inter-rater reliability. Even with our simplified instrument, differences of interpretation across raters were inevitable. During the first year, all ePortfolio work was assessed by the committee such that two members of the committee would use the rubric to score each piece of student work. After scoring the work separately, reviewers would compare scores. Identical scores and adjacent scores were considered unproblematic (when scores out of 5 were adjacent, the final score was calculated as the average of the two). In cases where scores were discrepant (e.g., differed by 2 points or more), the raters met to discuss their differences and negotiate a mutually acceptable final score.

While the committee authored a generic rubric for the LO webpages, we chose to utilize the AAC&U Integrative Learning VALUE Rubric when assessing the Integrative Learning Statements (ILS). As with the LO webpages, two committee members scored each ILS that was submitted, and worked through differences when scores were discrepant.

Table 2: Mapping existing rubrics onto our Learning Outcomes.

AUGUSTANA LEARNING OUTCOMET	EXISTING RUBRICS <i>(all rubrics are AAC&U VALUE rubrics unless otherwise indicated)</i>
Disciplinary Knowledge	Inquiry and Analysis
Critical Thinking and Information Literacy	Critical Thinking Information Literacy
Quantitative Literacy	Quantitative Literacy
Collaborative Leadership	Teamwork
Intercultural Competency	Global Learning Intercultural Knowledge and Competence
Communication Competency	Augustana Oral Communication Rubric Augustana Writing Rubric Reading
Creative Thinking	Creative Thinking Problem Solving
Ethical Citizenship	Civic Engagement Ethical Reasoning
Intellectual Curiosity	Foundations and Skills for Lifelong Learning

Fig. 1: Number of times a given Learning Outcome was identified as an area of strength.



The committee’s experience during the first year of the pilot led to minor revisions in the generic rubric moving into the second year. The committee disbanded at the end of the first year, but the scoring tools it devised was continued into the second year. During the second year, the use of two scorers per student submission was encouraged but not always enacted. All samples of work were assessed by the director of the ePortfolio pilot (the author), and faculty/staff mentors were encouraged to use the established rubrics as they served as second scorers. Not all mentors chose to engage in the assessment work, but, in cases where a second scorer was used, the system of reconciling discrepancies was maintained.

INSTITUTIONAL LESSONS LEARNED: DATA FROM THE PILOT

The ePortfolio experience appeared on the transcript of each of the 33 participating students. Students were given the option of completing the work as either a no credit experience or as a 1-credit elective. In either case, the experience was included in the student record along with a letter grade. The letter grade was calculated as a combination of active participation, portfolio completion, and quality of work as judged by the assessment process described in the previous section. For the two pilot years, it

was decided that “quality of work” would be judged solely on student performance on the Integrative Learning Statement and three Learning Outcome webpages of the student’s choosing. We felt that evaluating a student’s work for each and every learning outcome would be too burdensome for a pilot project (it was easy for students to walk away from the pilot, therefore we feared that too much work pressure would drive them out the door) and for a zero or one-credit experience. So, each student was asked to self-identify their three strongest learning outcomes and submit the corresponding ePortfolio pages for external evaluation to the committee during year one and the director during year two. Their Integrative Learning Statements were also evaluated externally. The remainder of their work was judged for completion only. As a result of this arrangement, it is unsurprising that the Learning Outcome webpages demonstrated strong student competence. Again, students were judged on only their three self-identified Learning Outcomes of strength. The evaluative scores for the pilot are thus problematic and will not be reported here. But, the students’ self-identified areas of strength provide a useful data set for our institution. Figure 1 shows the “outcomes of strength” that were reported by the 33 participating students.

Given the small number of student participants (33) and also the fact that the students were volunteers and thus self-selected, it would be inappropriate to read too deeply into the data shown in Figure 1. Still, as our institution examines the degree to which we foster the college-wide learning outcomes, these data do provide an indication of potential patterns we should monitor. Only 2 of the 33 students identified Quantitative Literacy as one of their three strongest learning outcomes, a possible indicator that our campus might need to look into ways of further developing our students' confidence and/or competence in this area. Indeed, the three learning outcomes that we categorize under the umbrella of "Intellectual Sophistication" (Disciplinary Knowledge, Critical Thinking/Information Literacy, and Quantitative Literacy) stand out as the cluster students were least likely to identify as outcomes of strength. By contrast, the "Interpersonal Maturity" category (consisting of Collaborative Leadership, Intercultural Competency, and Communication Competency) stands out as an area that students readily identified as an area of strength.

The evidence of learning that students presented in their portfolios confirmed our belief that rich learning occurs throughout the college experience, and that all aspects of the college experience contribute to students' development of the learning outcomes. Each of the 33 students identified 3 "Learning Outcomes of Strength," and a total of 159 learning artifacts were showcased in the corresponding LO webpages. The artifacts represented a wide spectrum of college life. As shown in Table 3, the artifacts can be organized into three broad categories: curricular, co-curricular, and extra-curricular.

Curricular artifacts, represented with shades of blue in the table, are artifacts of learning drawn from the traditional classroom. Co-curricular artifacts, represented in shades of green, include artifacts related to independent research projects, study abroad experiences, and internships.

These learning experiences occur outside of the traditional classroom, but typically have direct connections to classroom learning and serve to compliment traditional

Table 3: Types and quantities of learning artifacts showcased in Learning Outcome webpages.

Artifact Type		Description	No.
Curricular	Course(s) in Major	Written reflections on what was learned in a particular class or a sequence of classes in the major.	17
	Course(s) Outside of Major	Written reflections on what was learned in a particular class or group of classes outside the major.	12
	Course Assignment(s)	Class papers, projects, etc.	26
Co-Curricular	Research	Final reports or posters related to a research project that was conducted outside of course requirements.	4
	Study Abroad	Written reflections on what was learned by studying abroad or artifacts related to study abroad experience.	16
	Internship	Written reflections on what was learned in an internship or actual artifacts produced during an internship.	25
Extra-Curricular	Volunteer Service	Written reflections on volunteer service in the local community and/or related artifacts.	14
	Peer Mentoring/ Tutoring	Artifacts related to peer mentoring or tutoring within the college (through academic support services, residence life, etc.)	6
	Campus Clubs/ Organizations	Reflections on learning facilitated through campus organizations (e.g., Greek, common interest, etc.) or related artifacts.	28
	Residential	Written reflections pertaining to residence hall interactions.	2
	Athletics	Reflections on lessons learned through athletic participation and/or documentary evidence such as news stories, photos, etc.	9

academic work. Finally, the yellow-hued extra-curricular artifacts reflect aspects of the college experience that typically do not have direct connections to academic work. Further details about the types and quantities of learning artifacts are shared in Table 3. The artifacts were fairly evenly distributed across the three categories: 35% of the artifacts were curricular, 28% were co-curricular, and 37% were extra-curricular.

It was also informative to review the kinds of learning artifacts that the students used to document particular learning outcomes. Figures 2, 3, and 4 show these data, using the same color scheme as Table 3 (e.g., blue hues represent curricular artifacts, green represents co-curricular, and yellow represents extra-curricular). Artifacts drawn from the traditional classroom dominated the Intellectual Sophistication outcomes as well as the Intellectual Curiosity outcome. This is unsurprising as classroom learning tends to focus on outcomes such as these. A spectrum of artifacts was used to document the other five learning outcomes, however.

The artifacts documenting the Interpersonal Maturity outcomes are particularly diverse, suggesting that students feel their social engagement skills are developed via the holistic college experience. The artifact distribution shown for the Collaborative Leadership and Ethical Citizenship outcomes are also noteworthy. For each of these learning outcomes, the majority of artifacts presented were drawn from extra-curricular spaces. These are highly informal learning environments: spaces where no educator is intentionally trying to

Fig. 2: Intellectual Sophistication

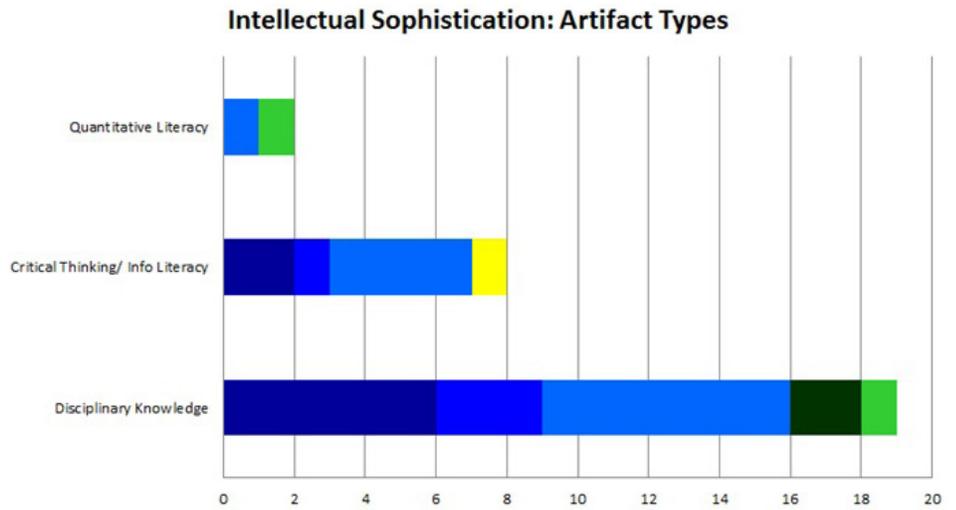


Fig.3: Interpersonal Maturity

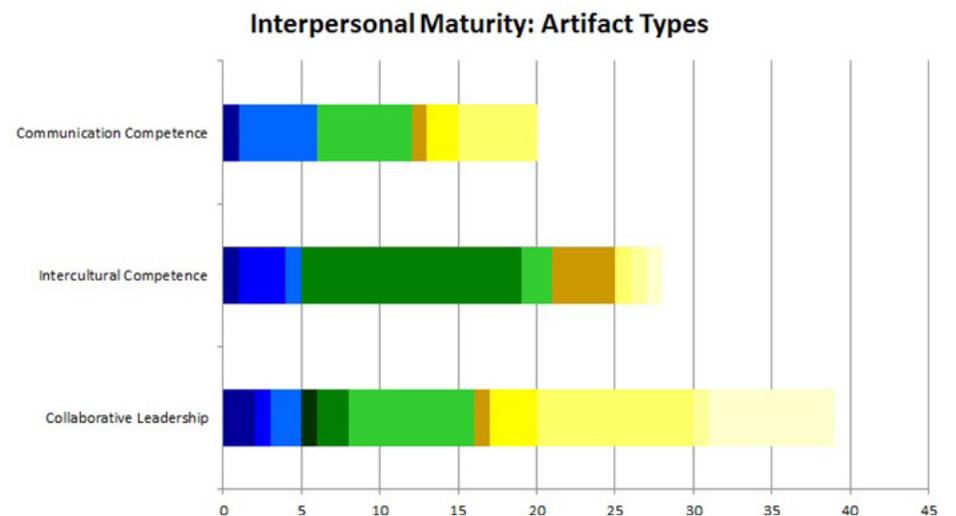
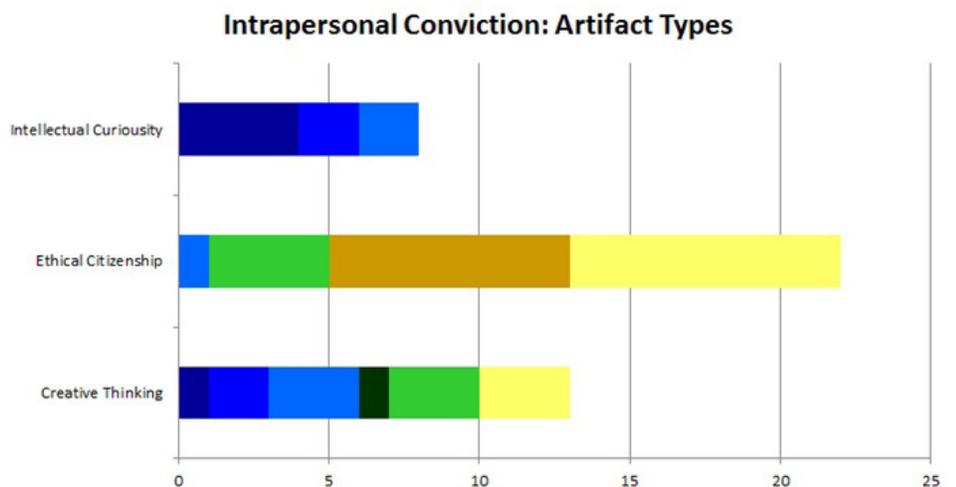


Fig.4: Intrapersonal Conviction



guide students toward learning. Still, these spaces that are supported by the college are indeed places where significant learning occurs.

CONCLUSION

Perhaps now more than ever before, traditional 4-year residential colleges and universities must persuade prospective students and their families that “going away to college” is a valuable life experience. Alternatives to the full-time, residential college experience abound, and these alternatives certainly appear attractive in terms of cost and convenience. Those of us who wish to see the traditional college experience remain viable and vibrant in the higher education landscape must demonstrate that the value of this experience more than compensates for its accompanying commitments of time and money. Comprehensive learning portfolios can serve as one source of evidence in this case.

Augustana College, like many other institutions around the country, has pledged to develop particular and transferrable knowledge, skills, and dispositions in each of our students. These are encoded in our college-wide learning outcomes, a statement of learning goals that is somewhat unique to our institution but largely influenced by the Essential Learning Outcomes promoted by the Association of American Colleges & Universities (AAC&U 2007). These outcomes truly have value that extends beyond the satisfactions of being educated: these generic learning outcomes are also the kinds of knowledge, skills and attitudes that are prized by employers (AAC&U 2015). In our ePortfolio pilot we put the onus on students to provide evidence that they had become competent relative to these outcomes. A significant proportion of the evidence they shared was drawn from learning experiences that occurred outside of the classroom: in residence halls, on athletic fields, through clubs, etc. Commuters and online students would rarely (if ever) have access to these kinds of experiences. Hence, with the comprehensive learning ePortfolio, we are seeing concrete evidence that the residential college experience has real educational advantages.

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A case for thick descriptions of ePortfolio contexts

by TRENT BATSON

edited by RUSSEL STOLINS

“Thick description” means studying not just behavior but also its context “such that the behavior becomes meaningful to an outsider.”

It is associated with Clifford Geertz, an ethnographer, in Thick Description: Toward an Interpretive Theory of Culture (1973).

I believe that, at this point in the evolution of the eportfolio field, educators need to more deeply understand the dynamic between “the digital context” (Randy Bass) and learning. (“How might the new digital context—the whole of the emerging learning ecosystem—help us make higher education widely available to and meaningful for an expanded population of college students?”¹)

In our field, we focus on one particular digital technology – eportfolios – because they are so broadly applicable across all academic functions. But, the end of our inquiry can’t be to advance eportfolios, per se, but to advance learning and education generated by “the eportfolio idea” (evidence-based learning).

The goal of our field’s research should not be to prove that “eportfolios work” but to discover what’s going on when they do “work” in a particular context. The context is primary – the learning design, characteristics of the

participants, their goals, a description of how technology of all kinds is involved, what support or incentives are involved, and any and all relevant factors that may affect the outcome. Since change is happening so fast in so many ways in higher education, isolating eportfolio technology as the determining factor for the outcomes of a project or initiative in any setting is most likely invalid. There are simply too many confounding factors. The eportfolio context is all-important because the context is what determines success. The context might not be possible without an eportfolio, but the eportfolio is only one of myriads of variables in that learning context.

My own bias is on the side of ethnographic (qualitative) research in educational settings. Ethnographic research includes empirical data that can be interpreted both qualitatively and quantitatively. But, its chief value as a research approach is the broad scope of the inquiry, that is, aiming to understand the whole context in which something occurs.

EPORTFOLIO RESEARCH

Research in the eportfolio field is active and valuable, thanks in part to:

- *The International Journal of ePortfolio*,
- The Inter/National Coalition for ePortfolio Research
- The Making Connections Center at LaGuardia Community College
- The AAEEBL Research group
- The Centre for Recording Achievement in the U.K.
- Europortfolio,
- The UGA Center for Teaching and Learning (and the eportfolio research archive)
- And numerous research projects on campuses.

But this research – as important as it is – may or may not have helped to actually prove anything although it has helped lay out appropriate areas of inquiry and thereby has created a field. As a research field, we have learned a lot, but academia as a whole – as reflected in the EDUCAUSE annual survey of undergraduate use of information technology – has a meager understanding of the eportfolio idea.

We cannot assume that, merely because eportfolio technology is being used widely in higher education, positive change follows, or any change at all, in fact.

In addition, in our field's casual discourse about eportfolios, a myth was perpetuated that, seemingly, the eportfolio technology itself “does” things. This myth about technology is deeply embedded in our culture's discourse as well. One could read about humans and technology over the centuries and easily assume that humans were passive while technology was the actor. While it's easier to say “airplanes have shrunk the world” or “cars created the suburbs,” those statements mis-identify the actual actors in each case and so simplify what happened as to make those results seem inevitable. In both cases, and in all cases of technology adoption and use, people themselves make the technologies bring about results.

THE SPECIFIC PROBLEM WITH EPORTFOLIO TECHNOLOGY DISCOURSE

In the case of eportfolios, attributing effects to the technology has caused problems by leading academics to acquire eportfolio platforms on the assumptions that “if you build it, they will come.” The thought seemed to be that just having eportfolio technology on a campus would bring about desired results. Although this assumption has led to many unfortunate failures or bad experiences, the way we speak about eportfolio technology remains unexamined: once an eportfolio initiative has failed, the technology myth is compounded when those involved in the effort say “eportfolios don't work.”

If this simplification extends to eportfolio research – so that research is designed to prove that the technology does work – then the researchers have fallen into the same intellectual trap as the disappointed practitioners.

Another layer of the problem is that those who question a new project to improve learning using eportfolios do want the project leaders to prove something about the technology itself. It's a natural instinct because of the widespread belief that technology is the active agent and not the users of technology.

Just so with eportfolios – the eportfolio technology does not operate by itself nor does it operate out of a context. The fact that eportfolios can support a wider range of learning designs should free up the imagination of academics to consider more options for learning designs, but the learning designs are the key to success, not the technology.

ARE WE IN THE FIELD ASKING THE RIGHT QUESTION?

The question researchers in our field should be asking is “in what contexts do eportfolios work best or add the most value?” AAEEBL, the Association for Authentic, Experiential and Evidence-Based Learning, was so named (and not “The ePortfolio Association”) in recognition of the fact that the learning design is primary, not the technology. Eportfolio use itself is described in AAEEBL's

name as “evidence-based learning,” not as “eportfolio.” The effort to move toward engaged learning in higher education in order to make the college experience align with current culture and society depends on a slew of technologies, among them the eportfolio. Technologies come and go, but the effort to improve learning is ongoing.

Technologies are broadly associated with changes that have occurred in published work about the history of technology, but that association may not really be a cause-and-effect relationship; the technology may have been merely the vehicle realizing a change driven by human goals. Technologies themselves are not disruptive, people using technologies in certain ways are disruptive. Humans drive change, not technologies. It is the “human effect” we need to look at. Attributing change to technologies is a cultural meme that does not stand up very well to close analysis.

HUMAN USE OF TECHNOLOGY IS THE CHANGE DRIVER

Just as it is a mistake to say that cars caused major changes (creation of suburbs, air pollution, social and economic mobility, for example) in the last century, it is wrong now to attribute current changes in culture and higher education to information technology in this century and not to specify, instead, ways that humans use information technology. Humans using technology bring about change, not technologies using humans.

Within education, a ripple effect from the digital revolution is a revolution in the nature of knowledge: knowledge now changes so fast and sweepingly that “delivering content” no longer makes sense but, instead, “teaching learners how to learn” does. If the content is fluid, it is no longer a thing but instead a process. It is now important to be able to engage in that process, not memorize a transient iteration of content.

It is this simple-sounding change from content to process that drives the need for eportfolios: eportfolios can help move from “content” to “process.”

Getting back to eportfolio research, then, what does the broad context referred to above mean for research design? If it is not the technology that is driving change, but our use of technology, then shouldn't we be focusing on our

uses of technology instead of on the technology itself? Or, more specifically, shouldn't we be studying internships and eportfolios, or field study and eportfolios, or first-year seminars and eportfolios, and so on? Shouldn't we be studying how eportfolios are applied within various

Technologies themselves are not disruptive, people using technologies in certain ways are disruptive.

learning designs? Shouldn't we be studying the contexts in which eportfolios are used?

Careful ethnographic observations – thick descriptions – of eportfolio-in-action will help our field better understand what role eportfolios play in different contexts. Careful observations provide recommendations or suggestions for others to try. At this point in the history of eportfolios in education, the technology itself is fairly common, and interest in eportfolio technology is strong, so attempts to prove that “eportfolios work” – as impossible as that is to show anyway – are not the best efforts to be making now. ePortfolios don't work outside of a context; but they may add value (and essential value at that) to those contexts.

AN EXAMPLE OF AN IMPORTANT QUALITATIVE STUDY

Here is an example: a study done years ago was designed to discover the differences between novice and expert writers. How to do that? First, a number of volunteer “novice writers” (college students early in their college career) were recruited and assigned a writing task. It was a timed task. They were asked to speak aloud to a tape recorder as they thought about the writing task. The idea was to discover what process they used to think about writing.

At the same time, academics in different fields (the “experts”) were asked to nominate colleagues who they thought were the best writers in their fields. A number of nominees volunteered to participate. Similarly, they were given a writing task and also asked to speak aloud as they worked on the task.

When the tapes were all transcribed and analyzed, these were the findings: the novice writers almost always immediately started working on the task by writing; they just jumped in to do the writing with very little thought ahead of time. They used almost zero time planning.

In comparison, the expert writers used a high percentage of their time planning, talking about – that is reflecting to themselves – who they would be writing to and what they wanted to accomplish by writing. They did some written brainstorming. They started and stopped and started over again. On average, they all used more than 50% of their total time on task in pre-writing exercises.

In this study, writing teachers learned that what novice writers need to learn is how to do pre-writing activities. This study and others like it provided huge value to the field of rhetoric and composition. This was good research that led to a better understanding about learning in a field. It was not trying to prove something but to discover something: what are the differences in approach to a writing task between experts and novices? Through this careful ethnographic study, the whole field of rhetoric and composition could develop new practices to address the actual problem of learning to write well.

WHAT IS THE GOAL OF EPORTFOLIO RESEARCH?

Our goal in the eportfolio field cannot be to focus on the technology itself, but the context in which it is being used, so that eportfolio practices, like composition practices, can be designed based on empirical data. And, secondly, the goal should be less often to prove something through a controlled experiment since controlling for all variables in a learning situation is so challenging. The goal should be to find out how successful practitioners use eportfolios in a particular context. The important outcome is to know how to best use eportfolios in a successful first-year seminar, for example – not just the outline or directions, but the actual day-to-day activities; the discoveries; the serendipity of those discoveries; how people felt; what they saw; what the participants might claim about the experience. In other words, a “thick description” of the whole experience.

AN EPORTFOLIO RESEARCH AGENDA

We know that eportfolio technology is widely used in higher education in at least 55 countries in the world (EDUCAUSE, 2014) but at the same time, we suspect that eportfolio uses referred to in these annual surveys most often would be characterized as “legacy uses,” or, eportfolios “bolted on but not built in.”² We cannot assume that, merely because eportfolio technology is being used widely in higher education, positive change follows, or any change at all, in fact.

Our field should, therefore, follow a research agenda that produces ethnographies (“thick descriptions”) of promising uses of eportfolios. We need much richer descriptions of the whole process of implementing eportfolios and other technologies on behalf of engaged learning. Change is in fact underway in higher education. That change is occurring because of a broad range of economic, cultural, demographic and political forces. ePortfolio, as a technology, does not and will not initiate that change; but eportfolio (as an idea and a technology) can help enrich and sustain educational changes. We need observe that process and communicate to higher education the value of eportfolios within that context.

Trent Batson (North Kingstown, RI) is President of AAEEBL and has served as an English professor or administrator at 8 different universities over a long career. Unable to summarize a career that long in a couple of sentences, he offers only this: “I have done better than I thought I would.”

¹ Bass, Keynote March 2016, found at <https://ctl.iupui.edu/News/2016/01/08/Georgetown-Randy-Bass-to-Keynote-March-Symposium>.

² EDUCAUSE, 2014

Corporate Partner Announcements

CHALK & WIRE (C&W)

Founded in 1996, C&W is an innovative, agile, fully integrated, “end-to-end” provider specializing in highly customizable eportfolios and badges for learners and embedded tools for schools across the entire learning lifecycle. It facilitates admissions, in-class and external learning workflows, progress-over-time performance and skills analysis; and alumni-employer engagement initiatives for collaboration and ongoing data collection.

LIVETEXT

LiveText empowers institutions and individuals with world-class technology and leadership to elevate and demonstrate the quality of learning. Our learning assessment and eportfolio solution, Via™, allows you to capture, measure and share learning experiences, no matter where they occur. Students, faculty, administrators, and the institution as an organization – all learners – are able to track progress and growth using innovative learner-centered tools, providing users with a deeper level of ownership over their learning.

MAHARA CELEBRATES ITS 10TH ANNIVERSARY THIS YEAR

The open source eportfolio system Mahara, maintained by Catalyst, was initially founded to serve the needs of tertiary institutions in New Zealand. It celebrates its 10th anniversary this year and is now used by organizations all around the world. Over those ten years, Mahara has grown to a full-fledged eportfolio platform, with two releases every year in which new features are introduced. The latest version, released in October 2016, includes an improved way to work with competency frameworks and visualize their completion with the help of evidence maps. Mahara can be integrated with other systems via web services to become part of an institution’s digital ecosystem.

PEBBLEPAD

PebblePad conference more international than ever. On the 12th – 14th September, PebblePad held its 4th biennial International Conference – PebbleBash. As ever, the event was big on examples of practice from numerous disciplines but had an even more ‘international’ feel with delegates from PebblePad customers Duke University and Portland State University in attendance. One delegate commented: “PebbleBash is one of the most inclusive, friendly, and thought-provoking conferences there is – all based on pedagogy. Absolutely how it should be.” For portfolio examples from Portland State University see pdx.edu/oai/pebblepad-deep-dive-1 learn more about what we do at pebblepad.com.

TASKSTREAM

Taskstream has been supporting portfolio pedagogy and assessment since our founding in 2000. With Taskstream, students can easily create ePortfolios to reflect on their learning and demonstrate their achievements. Programs and institutions can promote intentional learning and systematically collect, review, and evaluate student artifacts or entire portfolios with robust assessment capabilities and analytics to inform improvements. With over a decade of experience, we have built a depth of functionality and options for customization – along with unmatched implementation and support services – that enable us to meet varied and evolving needs of the diverse programs and institutions we serve.

DIGICATION

Founding Corporate Partner Digication will include an announcement in the next issue of AePR.

Call for Proposals

The Association for Authentic, Experiential and Evidence-Based Learning (AAEEBL) ePortfolio Review invites you to submit articles and reports covering the broad area of eportfolio use including: pedagogy (or learning theory, as you prefer), research (AePR is not a double blind peer-reviewed research journal but articles about research are welcome), technical (including articles about technology), and/or organizational issues. Published tri-annually (November, March and July), for eportfolio practitioners, administrators, and students, The AAEEBL ePortfolio Review is an online journal serving the needs of the global eportfolio community and seeks to promote portfolio learning as a major way to transform higher education.

ISSUE THEME - REFLECTION

Reflection is a core academic metacognitive function. ePortfolio practices invariably include reflective activities whether explicitly or not. Often, students work to integrate diverse learning experiences that have taken place over several semesters or years to create a capstone or culminating website. By engaging in that integrative effort, they must reflect – or find some idea or meaning in those learning experiences – in order to create the capstone. In the use of eportfolio, reflection allows the learner to further contemplate past events and tie them to current activities and acts to broaden the learning environment. For this issue, we are looking for articles on reflection that consider reflection in this broad developmental perspective.

But, reflection is not only important for learners; mentors (teachers) and administrators can also benefit from an intentional use of reflection: review and analysis of student written or spoken reflections extends their utility through multiple levels of an institution. Teachers can refine instruction and assignments based on student reflections. The institution can analyze reflections to better understand what students are learning and approaches to teaching that are most effective.

IMPORTANT DATES

Submission Deadline	Nov 31, 2016
Notification of Acceptance	2-3 weeks from the submission date
Draft Article Due	February 4, 2017
Publication	March 2017

For complete details, go to http://www.aeebl.org/page/aepr_rfp.