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What you end up remembering isn’t always the same as what you have witnessed.
—Julian Barnes
The Sense of an Ending

In this digital age, social media users no longer have to rely on their memories to capture key life events. Through blogging and other social networking platforms, such as Facebook, Twitter, and Instagram, we have the ability to readily preserve and access the richest details of our experiences. Eportfolios build on this technology by providing a digital space in which college students can weave together the narratives of their academic journeys. Students can use eportfolios to collect, select, and reflect upon learning artifacts—such as research papers, video clips, database projects, photographs, blog posts, and concept diagrams—that demonstrate their achievement of institutional learning outcomes. In this electronic format they can make connections between their learning and their lives and share their work with family, friends, and employers. In turn, faculty are able to use these artifacts to assess students’ intellectual growth.

Why is eportfolio practice so beneficial to students? To gain a better understanding, I sought the expertise of Terrel Rhodes, AAC&U’s vice president for quality, curriculum, and assessment, and executive director of VALUE (Valid Assessment of Learning in Undergraduate Education). Through his work on VALUE and other faculty-driven assessment of student learning projects, Terry has developed a high regard for the wide range of eportfolio practices and he shared the following thoughts:

Eportfolios are much more than a technology; they are a way of thinking about one’s learning. Eportfolio platforms or web pages obviously involve the use of technology that may be intimidating or perceived as a hurdle by faculty and students. However, eportfolios are one of the best technologies available to institutions to facilitate the collection, curation, and reflection on the myriad places and spaces in which student learning occurs during a postsecondary education. Indeed, when eportfolios are done well, they are a highly effective high-impact practice that deepens and integrates student learning.

Many of Terry’s learning assessment colleagues share his enthusiasm for eportfolios. In High Impact ePortfolio Practice: A Catalyst for Student, Faculty and Institutional Learning, a forthcoming book from Stylus Publications, George D. Kuh declares that eportfolios are the eleventh high-impact practice. Kuh is the director of the National Institute for Learning Outcomes Assessment, the founding director of the National Survey of Student Engagement, and the author of AAC&U’s publication, High-Impact Practices: What They Are, Who Has Access to Them, and Why They Matter. In his opening piece for High Impact ePortfolio Practice, Kuh writes, “One of the main takeaways for me is that good eportfolio work can be done effectively at any type of institution….Moreover, all students benefit, especially those who are less well prepared for college, which is one of the most important and necessary features of a high-impact practice.”

This issue of Peer Review surveys the current landscape of how colleges and universities are using eportfolios. The opening article, adapted from High Impact ePortfolio Practice by authors Bret Eynon and Laura Gambino, highlights the role of professional development in eportfolio practice. Additional articles address topics such as creating a campus eportfolio culture, maximizing the function of student eportfolios, and using eportfolios to deepen civic engagement. Finally, the closing article explores how academic transcripts can become more meaningful and transparent.

As the articles in this issue illustrate, the skills gained through eportfolio practice will serve students long after graduation. In the recently released AAC&U publication, Open and Integrative: Designing Liberal Education for the New Digital Ecosystem, authors Randy Bass and Bret Eynon underscore this long-term benefit: “An eportfolio can be much more than a site for storing student artifacts. When combined with integrative social pedagogy, next-generation eportfolio practice can play a critical role in transforming the learning experience. By helping students connect their learning across time, disciplines, and diverse domains, it can also help them build the dispositions needed for success and higher-order learning capacities.”

—SHELLEY JOHNSON CAREY
Professional Development for High-Impact Eportfolio Practice

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Research has shown that sophisticated eportfolio practice can advance student success, deepen student learning, and catalyze institutional change (Eynon, Gambino, and Torok 2014). In a fast-changing learning ecosystem, marked by digital innovation and calls for “unbundling,” eportfolio practice can help us build more integrative and adaptive universities (Bass and Eynon 2016). But high-impact eportfolio practice will never gain wide traction in higher education without the inclusion of effective professional development. To move beyond what Phil Hill has called the “purgatory” of pilot programs, colleges and universities must support professional development with resources equal to or even greater than the resources committed to developing new tools and systems (2014). While this priority is often acknowledged, robust support for faculty and staff learning is relatively rare in higher education.

Professional development is particularly critical for successful eportfolio practice. Eportfolio technology is simple to learn, but integrative eportfolio pedagogy takes time and support to master. Since eportfolio practice is most effective when students use it to connect learning across courses, disciplines, and semesters, eportfolio projects must move beyond “early adopters,” engaging a broader group of faculty and staff to construct shared purpose and coordinated design.

Building and sustaining a high-impact eportfolio initiative depends on effective, pedagogy-focused professional development. Sophisticated integrative eportfolio pedagogy can help advance student learning and success (Eynon, Gambino, and Torok 2014). But few faculty or staff members are familiar with such pedagogy, and even those who are need opportunities to deepen their craft. Professional development is the most efficient and engaging way to address this need.

Professional development designed to advance high-impact eportfolio practices can address a range of issues, from effective classroom teaching with eportfolio to training on eportfolio platforms, linkages with cocurricular learning or outcomes assessment, exploring disciplinary modes of inquiry and reflection, and making connections with other high-impact practices, such as first-year experience programs. It provides greater understanding of the broad usages of eportfolio and connects faculty members and stu-
dent life professionals in a concerted focus on student learning and growth.

Professional development can support powerful eportfolio practice and build student, faculty, and institutional learning. Our conclusion, based on years of experience with eportfolio and our research with the eportfolio teams of the Connect to Learning (C2L) network, is that thoughtful, sustained professional development processes are a crucial indicator for campus eportfolio success.

CONNECT TO LEARNING
C2L, a FIPSE-funded project, engaged twenty-four campus eportfolio teams in a four-year community of practice to learn together, document effective practices, and develop resources for the eportfolio field. Each sustaining their own campus eportfolio initiative, C2L campuses represented a diverse cross-section of higher education, from Boston University to San Francisco State and Virginia Tech, from CUNY’s LaGuardia and Guttman Community Colleges to Salt Lake Community College.

C2L teams engaged in mutual professional development, linking campus practice, annual face-to-face meetings, and online exchange (Eynon, Gambino, and Torok 2012). Each campus team curated an eportfolio to represent their practices and their campus eportfolio story. These portfolios are shared on the Catalyst for Learning: eportfolio research and resources website (c2l.mcnrc.org). The site also details the Catalyst Framework, a theoretical framework for launching, building, and sustaining a high-impact eportfolio practice.

Through our research, we found that successful eportfolio initiatives address multiple layers of campus activity—from classrooms to institutional policy—while addressing work in five interlocking sectors: pedagogy, outcomes assessment, professional development, technology, and scaling up. Effective work in these sectors is guided by the design principles of inquiry, reflection, and integration (see fig. 1).

DRAWING ON THE LITERATURE
High-impact eportfolio-focused professional development shares many characteristics with other types of professional development. Since the professional development literature is rich, we will touch on three threads that proved helpful to C2L teams.

First, C2L teams read and discussed Thomas Angelo’s essay, “Doing Faculty Development as if We Valued Learning Most: Transformative Guidelines from Research and Practice.” Angelo posits seven guidelines for productive professional learning communities, including build shared trust, design backward and work forward, and think and act systematically (2001). These guidelines highlight faculty engagement, crucial to the work of eportfolio initiatives.

The importance of institutional connection for eportfolio professional development was highlighted in Pat Hutchings’ 2006 essay, “Fostering Integrative Learning through Faculty Development.” Hutchings found that professional development helps faculty gain familiarity with integrative learning concepts and begin to change their practice. Equally important, she argues, is building a campus culture that supports integrative teaching and learning, inside the classroom and beyond.

C2L teams also learned that eportfolio-focused professional development leaders can and must see themselves as agents of institutional change. In “Moving from the Periphery to the Center of the Academy: Faculty Developers as Leaders of Change,” Dawson et al. discuss the ways that faculty developers in higher education are increasingly asked to manage institutional change, translating campus-wide goals into the realities of everyday classroom practice (2010).

Building on faculty and staff pedagogical expertise; connecting with and changing the campus culture; attracting administrative support; and consciously attending to issues related to systemic institutional transformation—these best practices commonly found in the literature can strengthen professional development around eportfolio. Educators interested in building high-impact eportfolio projects need to keep all of these issues in mind as they envision, design, and guide their professional development programs.

GETTING STARTED
Tips for Effective Eportfolio-based Professional Development

1. Focus on pedagogy. Technology is important to eportfolio, but pedagogy is crucial.
2. Partner with your campus Center for Teaching & Learning (CTL). The CTL can add experience, expertise, and continuity to your eportfolio work.
3. Build opportunities for sustained engagement. Changes in practice take time—integrating eportfolio pedagogy can be particularly challenging.
4. Model integrative eportfolio pedagogy. Help faculty experience the strategies you want to nurture.
5. Connect within and across departments. Respect discipline structures, but don’t be limited by them.
6. Build faculty leadership. Faculty insight and faculty voice energize powerful professional development.
7. Support faculty engagement. Recognize and reward faculty focus on eportfolio innovation.
Professional Development Structures

Campuses employ a range of different professional development structures, often calibrating their strategies to campus-specific cultures, the scale of available resources to support professional development, and the institutional priority placed on teaching.

Workshops. Some C2L campuses offered short, two- to three-hour workshops to faculty and staff. Some focused on eportfolio technology while others included discussions on pedagogical possibilities that the technology affords. Sometimes workshops complemented more extended processes.

Teaching Circles and Seminars. One variation on the workshop approach is a teaching/learning circle. A highly flexible professional development structure, teaching circles tend to be small, unstructured, and often self-initiated discussion groups. A small group of educators meet monthly, for roughly an hour, to share experiences on a teaching issue of common interest.

Members in a teaching circle might consider ways to utilize social pedagogy with eportfolio, help each other plan experiments in their courses, and then meet to discuss their findings.

Sustained Pedagogy Seminars. The C2L teams who were seeking sustained and structured engagement offered more intensive professional development, from summer or mid-year institutes to semester- or year-long seminars. These approaches, commonly offered through teaching and learning centers, allowed more time for conversation and exploration. As such, the intensive professional development seminars helped participants learn more about eportfolio before they began carefully redesigning courses to integrate eportfolio practice calibrated to their disciplinary modes. Sustaining the community of practice while faculty implemented eportfolio-enhanced courses offered opportunities for celebrating successes, troubleshooting problems, gathering evidence, and building reflective practice.

INQUIRY, REFLECTION, AND INTEGRATION IN PROFESSIONAL DEVELOPMENT

C2L campus portfolios used a range of structures to support faculty and staff learning and advance sophisticated integrative eportfolio practice. Across different structures, we found that effective professional development practices used the design principles of inquiry, reflection, and integration.

Professional Inquiry

Inquiry is a type of investigative, problem-based learning. In a professional development context, an inquiry provides opportunities for participants to ask questions and explore their own teaching practices and their relationship to student learning. Professional development programs employing collective inquiry ask faculty and staff to use classrooms as laboratories for scholarly experiments with new pedagogies, practices, and teaching strategies. Inquiry approaches encourage participants to grapple with pressing questions about teaching, learning, pedagogy, curriculum design, and assessment. Inquiry grounds the exploration of those questions in real-life, everyday experiences with students.

Eportfolio-related professional development activities on C2L campuses incorporated the principle of inquiry by engaging participating educators in exploring integrative eportfolio pedagogy, considering how to fit eportfolio into their own practices, and investigating the impact on student learning. Such inquiry can take place individually or collectively. While serving as the subject of inquiry, the eportfolio can also make changes in student learning visible to faculty and staff and accessible for collective examination. Shared review of student learning artifacts or of portfolios themselves can shift the focus from teaching to learning, and to consideration of the complex dynamic between teaching goals and the complexities of student learning. Using eportfolios to contextualize specific pieces of student work with an understanding of the student’s broader experiences can help faculty and staff think in new ways about students and deepen their inquiry into integrative pedagogy and practice.

C2L teams often combined individual and collective inquiry, asking participants to explore relevant literature and generate questions, experiment in their own classrooms, and return to the group for shared conversation. Groups can be department-based or interdisciplinary. Members in a teaching circle might consider ways to utilize social pedagogy with eportfolio, help each other plan experiments in their courses, and then meet to discuss their findings. Or they might, through a professional development opportunity linked to assessment, explore the nature of student learning around a particular competency. Through this process, faculty and staff can consider whether an institution or program is meeting its goals and identify gaps in curriculum and instruction.

Collective inquiry is often connected to programmatic or institutional outcomes assessment. An authentic outcomes assessment process that involves guided inquiry around student learning outcomes can become an opportunity for professional
learning. When this process generates recommendations for change in programmatic goals and practices, professional development is often needed to implement recommendations and consider their effectiveness.

Manhattanville College uses cross-disciplinary inquiry to shape eportfolio-focused teaching circles:

Driven by an inquiry-oriented design process, we ask faculty and staff to participate in a needs assessment process in which they are first asked to identify their instructional/programmatic goals and outcomes. Participants are asked to reflect on the degree to which their current instructional and programming practices are working to meet those goals. Identifying gaps between where they want to be and where they are sets up an inquiry process in which they can ask genuine questions about the ways in which eportfolio can be used as a pedagogical tool to help them bridge that gap or to transform ineffective strategies/practices (McClam 2014).

Sophisticated inquiry requires focused time and attention. Investigative groups can systematically explore well-defined questions about teaching and learning; or the inquiry process can be more self-directed, as participants review relevant research and develop their own research questions. Year-long professional development seminars at LaGuardia use this model, unfolding inquiry across semesters. Connected Learning, ReThinking the Capstone Experience, and other LaGuardia seminars use this process, helping participants not only implement eportfolio but also deepen their insights into broader questions.

**Reflective Practice**

Reflection is a fundamental component of effective professional development. Building directly on inquiry, reflective processes help participants examine and make meaning out of their own experiences and the experiences of their students. Reflective professional development deepens faculty and staff learning and helps them develop as practitioners.

Dewey scholar Carol Rodgers outlined a four-stage cycle for scaffolding both student and faculty reflection (see fig. 2). The four-stage process of (1) being present in the experience, (2) describing the experience, (3) analyzing the experience, and (4) shaping plans for new experiences builds on an inquiry approach grounded in educators’ own classroom experiences. At the same time, this process can help them move past concentrating mostly on lesson plans and highlighting their successes to a more productive professional learning experience (Rodgers 2001).

Building on inquiry, reflective activities help participants document and share their learning about their own practices and about the students they work with. Through reflective processes, faculty and staff learn to become more reflective practitioners. Reflections can be written, oral, artistic, or multimedia in form, taking place individually or in community. Reflection allows participants to connect experiences and integrate new knowledge. Through careful reflection, participants examine their teaching experiences and consider the implications for broader use of high-impact practices, integrative pedagogies and classroom-based eportfolio assignments.

In a professional development context, reflection can take different forms. Workshops often use brief reflective activities such as an open-ended post-seminar survey. Longer, more intensive professional programs allow for staged written and oral reflections, giving faculty and staff time to make meaning out of their successes and challenges. The common process of lesson-sharing creates possibilities for reflective thinking, particularly when the process is scaffolded to encourage faculty members to move from “what I did” to “what students did,” from pedagogical design to the complex realities of classroom implementation, and from a description of teaching to an analysis of student learning and grounded consideration of implications.

Peer mentorship programs can also encourage reflection, guiding faculty to think carefully about both teaching and learning. Reflection in community moves beyond meaning-making at the individual course level to spotlight broader challenges, such as gaps in disciplinary curricula, college-wide approaches to new technologies, and cross-disciplinary strategies to address general education and integrative learning goals.

Guttman Community College’s assessment days use institution-wide reflection linked to outcomes assessment. At these two-day-long professional development meetings, faculty and student advisors work together to use eportfolio to assess student learning achievement and reflect on the alignment of outcomes at the assignment, course, and program level (Gambino 2014).

Reflection deepens the value of eportfolio-focused professional develop-
ment. By connecting reflective professional learning with the power of eportfolio to make student learning visible, eportfolio-based professional development has the potential to go beyond helping participants become more proficient with eportfolio pedagogy. Done well, it helps faculty and staff become more focused on students and develop the habits of mind needed to support transformative student learning campus-wide.

Integration
Integration builds on the reflective, meaning-making process helping participants move toward synthesizing and transferring their learning. In this context, integration refers to the transfer of specific knowledge (about teaching and learning) from particular classroom experiences to broader contexts, extending to sustained practice, adaptation to other courses, and changes in departmental or college practice. Integration is operative when faculty and staff apply insights from specific instances to broader contexts, hereby deepening and sustaining innovations, and turning creative, one-shot experiments into broadly adopted changes.

Professional development programs provide an opportunity for integration as faculty and staff work with and learn from each other to build interdisciplinary communities of practice. These communities allow participants to share and critique each other’s assignments, course or program designs, and assessments in a collegial manner, integrating new learning into their practices. Integration provides an opportunity to implement pedagogical innovations in broader contexts, across disciplines, and outside the classroom.

Integration that fosters interdisciplinary collaborations between faculty and staff can spur institutional change by deepening the learning that takes place beyond the classroom. LaGuardia’s year-long professional development seminar, The Art of Advisement: Learning and Implementing Holistic Advisement Skills, creates a professional learning community consisting of both faculty and student affairs staff. The community explores eportfolio’s role in helping students integrate their curricular and cocurricular learning, and the use of eportfolios for improved advisement. Faculty and staff work together to apply their shared learning to advance a meaningful and effective advisement structure for students.

Integration is key to developing a broad and effective eportfolio initiative. Faculty and staff are expert learners; they have mastered the ability to transfer knowledge from abstract to specific in their own disciplines. Professional development can use these expert learning skills to help faculty and staff connect theories about integrative, reflective eportfolio pedagogy to their courses and cocurricular experiences. Conversely, integration encourages educators to build on their experiences testing new approaches by transferring lessons learned to new settings. Insights developed through classroom-based inquiry can be extended when faculty refine and apply them to new courses. Taking those insights into broader conversations about programmatic curriculum and institutional policy creates opportunities to design for coherence and create more integrative learning experiences for students.

CONCLUSION
Professional development is a critical component in the cultivation of a robust campus eportfolio initiative. C2L research findings show that effective eportfolio-related professional development activities are guided by the design principles of inquiry, reflection, and integration. These principles come to life when collective classroom-based inquiry and recurring reflections guide faculty and staff to construct and apply deeper understanding about teaching and learning. Thoughtful professional development—in combination with attention to the other Catalyst sectors—can advance the development of vibrant learning organizations. When that happens on a broad scale, across higher education, eportfolio practice will begin to realize its potential for building student learning and transformative change.

NOTE
This article is an adaptation of a chapter from the forthcoming book, High Impact ePortfolio Practice: A Catalyst for Student, Faculty, and Institutional Learning, which will be available in January 2017 from Stylus Publishing, LLC.

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Eportfolios: Supporting Reflection and Deep Learning in High-Impact Practices

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Eportfolios are a powerful pedagogical tool that can support deep learning and reflection across various learning contexts. This digital assignment can facilitate integrative learning and make learning visible to students, instructors, and external stakeholders (Chen and Light 2010). Eportfolios provide a space for students to showcase curricular and cocurricular experiences, to reflect on and integrate this work, and to directly assess their learning (Yancey 2004). Like high-impact educational practices, eportfolios require significant and purposeful “time on task” outside the classroom, provide opportunities for meaningful student–faculty interaction, allow for frequent feedback on student work, and show students how their learning progresses over time (Kuh 2009).

Our institution’s eportfolio initiative began in 2010 as a way to support integrative learning across campus and to provide a gathering place for students’ accumulated intellectual, artistic, and cocurricular work. Because we are a small liberal arts college committed to active and experiential learning, our students participate in multiple high-impact experiences over the course of their academic career. Findings from a Teagle Foundation assessment project, however, revealed that students needed more guidance in connecting their work in these activities to future learning experiences and career development. As part of the strategic planning process, the implementation of eportfolios was a means for supporting several functions: (1) as an opportunity for students to reflect on and integrate their academic and cocurricular work; (2) as the focus of advising conversations about a student’s plans, progress, and achievements; (3) as the creative opportunity for an “enhanced resume” for job and graduate school interviews; and (4) as an assessment tool for students, their departments, and the college. Most importantly, eportfolios would allow students to make their work public, to practice integrative and applied learning, and to construct a sophisticated bridge between their educational experiences and future learning and career opportunities.

The use of eportfolios began with student teachers in the education department and resident assistants in student life, and this tool now has become integrated into the business program and in studio art and media and communication culminating undergraduate experiences. In addition, students in select first-year seminars, service learning courses, and cluster courses (two thematically linked courses from different departments) create eportfolios as a tool to develop analytical writing skills, to foster reflection on community-based learning and social justice issues, and to practice integrative and interdisciplinary learning. Moreover, undergraduate researchers in a neuroscience lab are required to complete an eportfolio to document their research activity and to provide an opportunity to connect their findings to concepts learned in other courses. The integration of eportfolios into high-impact practices such as service learning, undergraduate research, and capstone experiences has served to deepen learning in these contexts and to support students’ ability to articulate skills developed through these practices. In essence, eportfolios serve as an additional high-impact practice, amplifying the effectiveness of these experiences.

EPORTFOLIO IMPLEMENTATION ASSESSMENT
Assessment played a key role in informing how we supported faculty as they integrated eportfolios into learning experiences. We conducted large-scale, institution-wide assessments across all contexts of eportfolio integration. Students who created eportfolios as part of curricular or cocurricular experiences in 2013, 2014, and 2015 completed surveys to evaluate their experience with eportfolio development and to assess perceptions of the educational
and professional value of their eportfolio. Open-ended questions allowed students to provide the rationale for their ratings and to offer suggestions for more effective integration in courses and programs. In-class workshops and one-on-one consultations with students allowed us to collect participatory observations of the process of students using eportfolios. Consultations and group discussions with faculty members provided insights into the student experience in the context of instructors’ goals.

Although faculty and staff implemented eportfolios in a variety of settings, our initial assessment data indicated that students did not always understand the value of eportfolio development. They particularly failed to see how creating an eportfolio could provide a different and more integrative lens to view their educational experiences. In reflecting on student perceptions, we realized that eportfolios were not always directly aligned with course or department learning goals, and that the type of reflection prompts developed for eportfolio assignments may not have always supported higher-order thinking and metacognition.

**Student Assessments**

Our findings suggested that the vast majority of students were able to articulate the stated goals and purpose of creating portfolios, but had not always internalized what this meant for their own personal and intellectual development. As we conducted student training and support sessions, faculty and support staff strived to place a critical emphasis on making the goals and purposes explicit and straightforward through repeated exposures across the entire time of implementation. In assisting students, we asked them to identify personal learning goals and to connect course- or program-level outcomes to those personal goals in ways that promoted student investment and agency.

Across the three years of data collection on student perceptions of eportfolios, we saw growth in students’ understanding of the eportfolio as an integrative experience across and beyond the curricular experience. In part, intentional efforts to provide resources to support student work facilitated this understanding. Eportfolio templates and on-screen instructions helped students link artifacts from personal experience and relevant cross-curricular activities to course goals. Before such guidance, students often seemed less motivated to modify and develop their eportfolios and, in some cases, viewed the assignment as busywork.

**Faculty Assessments**

The informal interviews and group discussions with eportfolio instructors suggested that faculty members sometimes encountered difficulties making the connection between eportfolio assignments and overall course goals visible and understandable for students. They also found it challenging to transform existing course assignments into high-impact practices within eportfolios.

We implemented several strategies to address faculty members’ needs and concerns. To support those instructors who wanted their students to use eportfolios as a career development tool, we partnered with support staff from the Career Center who provided guidance on how students could use the eportfolio as a showcase of accomplishments for prospective employers. Collaborating with individual faculty members, we provided resources...
What impact did the reflection assignments have on your understanding of the real world?
- In what way were your preconceptions of issues challenged through your reflections?

The eportfolios also provided a space for students to describe the work they did with the high school students in weekly blog postings, allowing them to make visible the ways that they applied the conceptual knowledge gained in the course to working with local communities.

Undergraduate Research in Neuroscience
In a neuroscience professor’s research lab, students developed eportfolios as part of their undergraduate research experience. In the lab syllabus, the instructor highlighted the value of the assignment for honing students’ analysis and synthesis skills and for providing a forum for connecting the research experience to other learning opportunities. Reflections were directly connected to the outcomes of this high-impact experience, with students outlining their research goals and questions, analyzing relevant scientific literature on their topic, describing research design and methodology, and connecting their findings to predictions and past literature. Sample prompts, some of which were developed in collaboration with the student researchers, included:
- What questions do you intend to address in your study?
- What specific skills do you hope to learn or refine?
- How did the past literature inform your choice or research design?
- How do your findings fit (or not) with past literature?

Eportfolios in this context provide a record of students’ research activity, develop students’ abilities to critically analyze and synthesize the literature, and support deeper reflection of undergraduate research. Students also gain a valuable tool that can inform applications for future academic and career opportunities such as summer research experiences, graduate school, or research positions.

Capstone Experience in Media and Communication
The Digital Media Design Lab was one of the culminating undergraduate experiences for media and communication majors. The course provided a hands-on experience in which seniors integrated the knowledge, abilities, and practices they had encountered across their major course of study. The eportfolio assignment functioned as a showcase for the student’s work and as a space for thoughtful reflection about skills and experiences. Through group and instructor collaboration, students constructed their eportfolios by revisiting past works, reflecting, and sharing in a workshop environment. All forms of work—writing, research, media artifacts—as well as representations of learning in the context of cocurricular activities (community service, student organizations, athletics, etc.), internship profiles, and study abroad reflections were potential artifacts to be included in the cumulative, career-oriented eportfolios. As part of the assignment, students drafted a short self-narrative in which they shared their educational story responding to the following prompt, which encouraged self-analysis and attention to audience:

This is an opportunity to introduce yourself as an individual in relationship to who you are as a student, a learner, someone preparing for their future. Think about your primary audiences: instructors, scholarship committees, employers, etc. Think carefully about what and how you share your information in this online context.

The instructor provided specific questions to guide students as they reflected on their identity as a learner across contexts. Students made their learning experiences visible in an integrated narrative with atten-
that this work supports the development of these outcomes. As with many assignments, when professors “connect the dots,” students are more likely to understand the purpose and value of their work. In the case studies from our institution, eportfolios are tied closely to the outcomes of these high-impact experiences. Moreover, instructors outline in their syllabi the role that eportfolio assignments play in supporting student learning.

Reflection plays a critical role in determining the effectiveness of eportfolios in developing integrative learning and metacognitive skills; however, simply instructing students to reflect on their capstone, research, or service-learning experience does not automatically lead to sophisticated analysis. In order to foster deep student reflection, eportfolio assignment prompts need to be direct and succinct. Prompts should be connected to course goals and provide students the opportunity to make learning visible to the instructor, the student, and a more public audience. Furthermore, prompts should require students to reflect on specific aspects of their prior learning, present experience, current course readings, and/or future skill development. For example, students in the sophomore honors seminar wrote directed reflections on concepts addressed in course readings through the lens of their service learning work. Undergraduate researchers in the neuroscience lab reflected several times during the semester on their research goals and skill development, providing a visible pathway for learning. Student teachers posted videos of their classroom practice and outlined how the lesson reflected their teaching philosophy and objectives.

Resources abound to support the development of effective reflections. Dietz-Uhler and Lanter (2009) offer examples of prompts that support deeper learning and engagement. These prompts could be adapted for eportfolio assignments to encourage students to connect concepts and experiences in high-impact activities at both an intellectual and a personal level:

- "Identify one important concept, research finding, theory, or idea … that you learned while completing this activity.”
- "Why do you believe that this concept, research finding, theory, or idea … is important?”
- "Apply what you have learned from this activity to some aspect of your life.”
- "What question(s) has the activity raised for you? What are you still wondering about?”

Prompts such as these allow students to create their own meaning of learning opportunities and foster reflection and curiosity.

**CONCLUSION**

Our experience shepherding Muhlenberg’s eportfolio initiative—working with faculty and students to integrate eportfolios into high-impact practices—has reinforced several key elements that are vital to successful eportfolio pedagogy. Eportfolios need to be closely linked to student learning goals. Eportfolios need to engage students in deep reflections. Eportfolio prompts need to be carefully constructed to support this type of reflection. As members of our digital learning team say, “It’s about the pedagogy, not just about the tool!”

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Eportfolios serve multiple purposes—documenting course or programmatic assessment as well as facilitating student learning (Lorenzo and Ittelson 2005). However, without institutional intentionality to create authentic student products that document student learning, student eportfolios could end up “glorified electronic file cabinets with little meaning” (Reynolds and Patton 2014). Using eportfolios solely for assessment limits the scope of what an eportfolio can achieve. More than just a repository of work, an eportfolio should be a student-centered collection of work that supports deeper learning and self-reflection (Barrett and Wilkerson 2004; Parkes, Dredger, and Hicks 2013).

This article presents findings from a study conducted at the Undergraduate Research Opportunities Center (UROC) at California State University, Monterey Bay, a four-year, public, minority serving institution (MSI). Our institution uses eportfolios, not only for assessment but also to support diverse students using a tool that facilitates reflective learning, develops transferable knowledge, and builds professional online presence. In this article we present examples of how students reflect on their learning, communicate what they are learning to their peers and families, create a professional online identity, and demonstrate learning experiences, which provides artifacts assessment.

UNDERGRADUATE RESEARCH EPORTFOLIOS
Undergraduate research is well documented as a high-impact process (Kinzie et al. 2008) and is tied to a number of positive student outcomes, particularly for traditionally underrepresented students (Cole and Espinoza 2008). However, despite the high rates of participation and positive outcomes of undergraduate research, little is known about how to facilitate reflective learning or develop transferable knowledge through high-impact practices. In addition, facilitating and demonstrating cumulative knowledge is often absent from high-impact practices like undergraduate research.

We support undergraduate researchers in being active participants in knowledge creation—and to be, in the words of Kathleen Yancey, the “information architects” of their scholarly work. We encourage them to collect authentic “cultural artifacts” (Yancey 2004) that chart their growth and development as scholars. To do this, we use reflective writing activities that guide undergraduate researchers to learn about themselves.

Reflective writing is also well documented as a deliberate practice learning tool (Yancey 1998). Meaningful reflection involves critically examining actions and experiences in order to discover new ways of thinking or being. Such reflection uses a metacognitive approach, which supports problem-based learning and teaches students tangible ways to effectively tackle problems (Costa 2001). This reflection encourages self-directed learning and cultivates critical thinking (Lin 2001), helping learners make new connections among issues.

Course Implementation
The eportfolio was implemented as a major deliverable for a research seminar series—four consecutive courses designed to immerse students in authentic research experiences, develop their scholarly identity, and prepare them for graduate school. Starting in the spring of their sophomore year, students participated in one seminar course each semester as well as in a research experience during each summer as rising juniors and rising seniors. Three student cohorts participated in this study, for a total of about forty-five students.
The eportfolio was introduced to each cohort during their first seminar course and consisted of two parts: a summer blog, using an open-source online blogging platform, WordPress; and selected students’ academic products. Students produced weekly or bi-weekly written pieces, roughly three hundred words, reflecting on some aspect of their summer research, with the encouragement to also include relevant photos and videos. Additionally, students were asked to comment on a few fellow students’ blogs each week. In concert with the blogging, each cohort was assigned readings designed to foster reflection and communication and asked to communicate regularly with their cohort in a series of forum posts on a private class website. In this way, the summer blogging prompted students to reflect on their learning and development, as well as communicate their learning to their peers, families, and external audiences. At the end of the summer, researchers also wrote an end-of-summer reflection focusing on summer milestones of learning and growth.

The eportfolio was considered a “living document” that grew in depth and sophistication as the students grew as scholars. Students began with basic Home and About Me pages by the end of the first spring semester. Over the summer, students created their blog during their research experience. By the end of the following fall, students added a CV, products from their summer research (an abstract and poster, perhaps also a paper/manuscript), a LinkedIn account, and a more developed About Me page including photos of their research, academics, service, and other items that highlighted their scholarship. By the fall of their senior year, students added their second summer of blogging and further polished their academic products. At every stage, students were tasked to consider their visual rhetoric: to select images, graphs, and illustrations that considered their audience and principles of good design and made a compelling argument for their professional identity. Over the two years, students were refining a professional online presence that could be shared with potential employers or graduate schools.

METHODS

We reviewed forty-five eportfolios from summer 2014 to fall 2015. Qualitative analysis of the eportfolios and summer essay reflections included content analysis along with scoring eportfolios on the AAC&U Integrative and Applied Learning VALUE Rubric. A priori coding was used to analyze blog posts for visual rhetoric and issues of identity (see fig. 1 for coding structure). Inductive coding from identity theory (Chickering and Reisser 1993; Stryker and Burke 2000) and the AAC&U Integrative Learning VALUE Rubric framed our study.

To ensure consistency in coding, four researchers coded on the same set of cases. Findings were also checked against participant experiences by presenting findings to undergraduate researchers to check for validity from their perspective.

FINDINGS

Analysis of students’ eportfolios and written reflections highlight how eportfolios can be used for the four following purposes: reflection, communication, developing professional identity, and demonstrated learning.

Reflection

As undergraduate researchers move through competing social, personal, and academic roles at the university, they benefit from reflections that force them to think metacognitively about their world as they negotiate existing and newly forming identities by asking questions such as: Am I a researcher? Am I a writer? What does it mean to be an academic scholar? Reflection and writing about new emerging roles help students develop and negotiate their multiple identities as learners and future members of a research community.
(Stryker and Burke 2000). When asked to write blogs for public audiences, students articulate their research more clearly. In this modality, students use metaphor, storytelling, and pictures to communicate their research interests, methods, and findings to a nonacademic audience.

**Communication**

Reflecting in a public forum motivates students to critique each other’s reflections. Apart from improved writing benefits, peer review of their reflections lets students learn from each other’s experiences and helps normalize some of the challenging aspects of research. Mandy, a white marine science student, notes the diversity of experiences in her second summer of her research experience:

“Everyone in each of these [research experiences] were [sic] all doing science. Legitimate, accurate, well thought and planned out science, but they are each on different levels. This isn’t something I had really realized until I was reading the blogs of my friends and speaking with our [research team]. And I think that this is one of the most eye opening aspects.”

In sharp contrast to traditional essay reflections read only by faculty mentors and staff, a relatively limited and closed audience, public posts motivate students to spend more time editing their work and thinking about their writing in relation to publishing the final product. For example, Alice, a Latina marine biology major, reported struggling with writing and developing her work:

“I wrote a weekly blog that was published online. Knowing that my writing was accessible to anyone made me work harder to produce a better product. I did not post anything without reviewing it twice myself and then having a writing partner review it. This revision process was simpler than I expected, and I will continue to use this method in the future. I also kept a personal journal this summer that I tried to write in daily. I did this to become more comfortable with my writing and replace the negative association I have with writing with a positive one. By increasing my ability to critically think and write, I am better prepared for the scholarly work I will need for graduate school.”

The act of writing for multiple public audiences in an eportfolio can be a transformative experience for a student (Gallagher and Poklop 2014). Working with undergraduate researchers to negotiate these multiple audiences warrants critically thinking through all the different possible external and internal groups of people who may come across the eportfolio. Writers continually have to step back to re-evaluate their audience, as Brittany, a multi-racial marine science student, describes:

“Often one of the most complex parts of the research process for me is connecting the somewhat focused results to the grander scheme of your topic. By the time you have all of your information, you may have been thinking about one very narrow aspect of the story for a very long time. When it’s time to tie it all together for publication or other types of communication, one must take a step back and begin to look at the whole picture again.”

Here Brittany is demonstrating learning about the importance of communication as she makes the move to publish her work. Communicating research in her eportfolio changes how she thinks about her project. However, this self-editing also comes with a cost. Student writing online, while often more polished, was also self-censored in that students did not bring up problems, struggles, or conflicts that arose during their research experience on the blogs. This finding highlights the benefits of writing for the public but underscores the need for private avenues for reflection to facilitate students’ reflection on difficult or private issues.

**Professional Online Identity**

Having eportfolios allows students to present professional identities, but the very act of developing and crafting an eportfolio also helps them to shape their identity and embrace their roles as scholars, as illustrated by Maddie, a white, first-generation, low-income psychology major:

“This summer, I grew in more ways than I thought were possible. I was tested as a researcher, challenged as a scholar, and embraced as a young woman on a mission in New York City—a mission to thrive…. Most importantly, I found the confidence within to believe that I belong in this field, and my roots are firmly planted…. Thank you to everyone at [research institution] who believed in me and helped nurture my growth as an undergraduate. Watch out world, here I come.”

Identifying with research and academia is an important step for students who often struggle with imposter syndrome and feeling disconnected from academic communities, such as Monica, a white, first-generation, low-income mathematics major who added her “self-proclaimed identifiers” to her eportfolio.

“I chose mathematician, statistician, married, female, low-income, first-generation college student, because these six phrases are my passion, past, and future.”

Additional reflection and analysis showcase what she got out of her research experience:

“During my time at [the university’s] School of Public Health….. I have been asking myself: ‘Why do I want my PhD? Are the reasons I want my doctorate in biostatistics (or
Students were not given the rubric prior to their research experiences during the pilot years of implementation so that we could assess the learning and reflection that was happening organically. We found some patterns in students’ responses, including scoring higher on reflection/self-assessment and connection to experience. Unless their research directly involved interdisciplinary collaborations, students tended to connect strongly within their own discipline but did not make interdisciplinary connections. For this reason, students scored lower on the connection to discipline category. Similarly, students less often organically demonstrated transfer of knowledge in their eportfolios without prompting.

Lessons we learned from piloting the eportfolio and scoring on the VALUE Rubric included the benefits of norming when multiple staff and faculty are scoring student work. Though initial scoring was consistently within one point of other reviewers, after one norming session, ratings were more consistent. This process also allowed us to modify the rubric to best suit our students’ experiences.

CONCLUSION

Using the eportfolio as a tool for undergraduate researchers helps them establish a professional identity and communicate research, all while also documenting their learning across the research experience. This practice can be an effective way for institutions to use authentic student work as a means for learning assessment. More broadly, such an approach not only benefits individual students but also can increase retention of underrepresented students in research fields and the preparation of researchers for their career pipeline.

REFERENCES


Design Thinking as a Strategy for Consensus in General Education Reform

Tom Schrand, associate dean for general education, Philadelphia University

When you are developing a new course, one recommended approach is to begin by defining your learning outcomes and then to work backwards from there to determine the appropriate course topics, materials, and assessment methods. In 2011, as Philadelphia University prepared to launch an ambitious initiative for reforming general education, we wondered if we could apply the same “outcomes-first” approach to a university-wide curriculum. Our goal was to establish general education learning goals that we could extend into all of the university’s majors as well as its cocurricular programs.

Due to our institution’s focus on professional education, sometimes our general education curriculum has been a point of contention. When our major programs have felt pressured by their accreditors and the labor market to expand the practice-based education of their students, one of their responses has been to look for a reduction of general education requirements. For some students, general education requirements have been seen as a distraction from their training in fields such as architecture, health care, or fashion design. And although our existing general education core curriculum, the College Studies program, was carefully sequenced, regularly improved in response to assessment, and based on relevant outcomes, students often had trouble recognizing the goals or value of the general education curriculum.

RE-VISIONING GENERAL EDUCATION

To address this gap between the different elements of student learning on our campus, our provost’s office assembled a faculty steering committee and asked it to “re-vision” general education in the context of our mission of professional education. Our mandate was to seek innovative ways to establish general education as the joint and shared responsibility of the core curriculum, the majors, and cocurricular learning experiences such as study abroad, internships, and student leadership in residence halls and campus organizations. On paper, this broad understanding of general education had long been an element of our approach. However, an external review of our program in 2012 concluded that there was little awareness of this connection between general education and professional education among faculty outside of the general education core curriculum, or among our student body as a whole.

At that time, Philadelphia University was pioneering a new approach to professional education for its students studying in the design fields, in engineering, and in business. Anticipating a twenty-first-century workplace where multifunctional teams routinely collaborate in the conceptualizing, development, testing, and marketing of new products and services, we established our new Kanbar College of Design, Engineering, and Commerce to bring students from the design, engineering, and commerce (DEC) fields together through shared common courses and project-based learning experiences. The DEC core curriculum is organized around real-world, collaborative projects and applies design-thinking approaches to problem-solving and value creation in a team setting. As our DEC colleagues were introducing our students to this model of multidisciplinary collaboration and design thinking to identify opportunities and solve problems, it seemed only natural that we would apply it to our own work on general education.

The design-thinking approach involves observing and deeply understanding the situation that you are trying to improve, including gathering viewpoints from different participants or stakeholders in the situation. Our external reviewers had already helped us identify some key problems with our general education program: our campus community had neither a widely shared
understanding of general education nor a strong awareness of our learning goals in this area. In light of these findings, our first step was to devote one of our monthly university faculty meetings to a visualization exercise designed to encourage dialogue about general education. Mixed groups of faculty from all across campus sat together at large round tables with sketch pads and markers; their assignment was to work collectively to design a diagram that illustrates the relationships between the majors, the cocurriculum, the core curriculum, general education, and liberal education. The dizzying variety of different images and metaphors that resulted from this exercise reflected much meaningful thought about the topic, while also confirming that our university community lacked a clear vision of general education and how it could best be achieved. Our steering committee also organized separate events for students to discuss and share their ideas about how to create more effective and meaningful general education.

**COMMON GROUND FOR GENERAL EDUCATION**

Our efforts to define the common ground for general education between the majors and the core curriculum led to one of the pivotal events in our initiative. The executive dean of the Kanbar College of Design, Engineering, and Commerce, Ron Kander, who oversees a variety of majors that require special professional accreditation, remarked that a number of these accreditors included broad liberal education skills and competencies in their assessment criteria. This observation inspired our next design-thinking event, adapted from an exercise used in the DEC core curriculum. We collected the criteria from all of the professionally accredited programs on campus, printed out each one on a separate sheet of paper, and pinned them all up on the magnetic white boards that cover the walls of one of the large studios in our new collaboration-focused classroom building, the Lawrence N. Field DEC Center. With over 130 different criteria shuffled and randomly distributed on the walls, this room became the setting for an "affinity clustering" activity. We invited a group of faculty and administrators to join us there and asked them to group the criteria according to perceived similarities. This was a self-organizing process—anyone present was free to arrange and rearrange the criteria any way they wanted. As clusters began to form, participants began to label them by writing a category name on the white board above them. In the span of twenty or thirty minutes, the rearranging had slowed to a stop, and we could see what kind of categories had emerged. We had a few categories for very technical or functional skills specific to one field or another, and a number of other, more universal categories like “collaboration,” “critical and creative thinking,” and “ethics” that our accreditors valued and expected from programs across a variety of professional fields. The “affinity clustering” exercise was critical in shaping our collective thinking about general education. It reassured our general education faculty that there were common learning outcomes that spanned both the professional majors and the core curriculum, and it convinced faculty and program directors in the majors that these outcomes were essential to their curricula, suggesting that a coordinated approach to them, in partnership with the core curriculum, would be an effective way to prepare their students and satisfy their accreditors. The affinity clusters also gave us a taxonomy of learning goals that we could begin to work into a new framework of outcomes for general education on our campus.

The next step in our initiative was to articulate our approach to general education in terms of a “value proposition,” a concept taken from the Business Models course in our DEC core curriculum. Developing a value proposition is a technique for framing a new product or service in a compelling way that demonstrates its value to the potential user or client. The process involves answering questions to determine what problem the product or service is solving (or what need it is satisfying) for the user, and what differentiates it from similar products.

We organized university faculty meeting attendees into small groups and used a series of questions to guide each group through the formulation of a value proposition. Our steering committee collected and distilled the results to produce a draft that we brought back to the full faculty later for review and comment. From there, we held a series of faculty workshops to begin translating our value proposition findings into learning goals for a new general education program. The end result was a collection of broad general education learning goals, each expanding upon and operationalizing one of the terms used in the value proposition.

The design-thinking approach generally includes separate generative and iterative processes. After an “ideation” or brainstorming phase to spin out as many different potential solutions to a problem as possible, the results are then reviewed and analyzed, and the most promising are rapidly prototyped. The goal is to manifest a version of the product quickly so that it can be tested and its shortcomings can be analyzed and corrected in a cyclical process of improvement. Our work on general education included both ideating and prototyping phases, allowing us to canvas the university community for ideas and feedback to ensure that diverse views and stakeholders were included in the process. By the time we had finished drafting and revising our value proposition, we had consulted all of the key players and interests and incorporated their perspec-
tives. The end result was a vision for general education based on consensus and common interests. Aside from some quibbles about wordsmithing, at this point we had arrived at a set of learning goals that everyone on campus could stand behind:

- **Curiosity:** Creating strategies for expanding knowledge through reflection and research.
- **Confidence:** Challenging concepts, practices and experts with reasoning and evidence.
- **Contextual Understanding:** Developing and sharing insights using appropriate means of expression.
- **Global Perspectives:** Navigating diverse environments and complex issues by managing multiple systems of knowledge and behavior.
- **Empathy:** Considering multiple perspectives to relate to others and strengthen communities.
- **Collaboration:** Achieving goals by integrating skills and knowledge in a team setting.
- **Initiative:** Taking creative and intellectual risks when exploring ideas and real-world problems.
- **Ethical Reflection:** Affirming an ethical compass to guide personal, civic, and professional life.

**A BLUEPRINT FOR A CURRICULUM FOR ALL UNDERGRADUATES**

Bolstered by this sense of shared interests, we moved forward to the task of converting the value proposition and its learning goals into the blueprint for an actual curriculum for all of our undergraduates. For this phase of the process, we recruited a team of five faculty members, which included the associate dean in charge of the existing general education core curriculum, the associate dean of the College of Science, Health, and the Liberal Arts (which delivered the bulk of the general education requirements), a faculty representative from the core curriculum, and associate deans from the university’s other two colleges: Architecture and the Built Environment; and Design, Engineering, and Commerce. The composition of this team ensured that we had experts on the structure and requirements of our current core curriculum as well as representatives of the professional majors, so that we could quickly troubleshoot any new strategies we were considering in terms of their impacts on the existing programs.

We commissioned this team to spend four weeks in June 2013 to design a delivery system for the new value proposition and asked them to report on their progress at the end of each week to an advisory committee of academic administrators, students, student life officials, and representative faculty members. The process of ideating, prototyping, testing, and improving resumed—now on a weekly cycle—using the advisory committee as a focus group for the new approaches that our team was generating. The weekly Friday lunch meetings kept the team on task and allowed it to receive immediate feedback on the direction of its work. The advisory committee, for example, quickly shot down an initial concept involving the collection of digital badges based on a passport/visa metaphor. Our team went back to its project room and developed a new eportfolio-based approach that became the foundation for our new Hallmarks Program.

Our intention in developing broad consensus-based learning goals was to define general education in an expansive way that would allow students to develop new competencies and track their progress across all of their university experiences, including cocurricular activities. In our vision of the eportfolio process, students would revisit the different learning goals multiple times by posting a relevant artifact for each one from a course in their majors, from a course in the general education core curriculum, and from their cocurricular experiences. Students would also be asked to post a short essay (around 250 words) that explained why they were connecting a specific sample of their work with a specific learning goal, and how their work illustrated their progress toward that goal. This stacking of artifacts and reflective essays was intended to create a triangulation effect, as students reconsidered each learning goal in several different contexts and began to see how connections could be made between their learning in different locations across the campus and in different semesters across their university careers.

**ENCOUNTERING THE SAME LEARNING GOALS ACROSS THE CURRICULA**

To create this experience of encountering the same learning goals in different places across the curricula, we needed to identify the points in each program where we believed that students could and would develop each competency. For the majors, this meant developing a curriculum map for every major program on campus that aligned each of the eight learning goals with at least one course that would
produce student work relevant to that goal. In the cocurriculum, we decided to allow students to choose any four of the learning goals to which they felt they could meaningfully link their experiences. For the third component, the general education core curriculum, the new program inspired a more ambitious transformation.

The existing core curriculum, the College Studies program, was organized primarily around disciplinary categories, such as Social Sciences, Humanities, and Historical Understanding. As we considered how to align our general education requirements with the new learning goals, we decided to restructure our requirement categories around themes and topics, rather than disciplines. The science and mathematics requirements still stumped us, so they remained unchanged. The result was requirements in areas such as American diversity, global citizenship, ethical reflection, and global diversity, with each category aligned with one of the eight learning goals. The combination of broad nondisciplinary learning goals with a defined set of requirement themes gave us a system of coordinates for curriculum development, similar to latitude and longitude measurements. New or existing courses had to meet at the intersections of the designated learning outcomes and the content themes of the requirements, so that student learning experiences would be comparable, even with different course selections in each requirement category.

We also assigned the new core curriculum the task of tracking and evaluating student progress in the development of their eportfolios. Our curriculum mapping for the majors and the core curriculum allows students to identify which courses are intended to help them produce artifacts, and we wanted to provide some checkpoints to encourage them to update their portfolios as they completed these courses. For that purpose, we designated one general education requirement in each year of the curriculum as a “touchstone” course. In these four courses, in addition to the regular course content, the instructors would spend some class time reviewing their students’ eportfolios and assessing whether they were on target in terms of the courses that the students had already completed. As the touchstone courses progress from first year through senior year, the percentage of the final grade determined by the quality and completeness of the eportfolio increases. This approach ensures that students are guided and held accountable in the development of their eportfolios.

A COMPREHENSIVE CURRICULUM MAP
To complete this new core curriculum, we took the eight campus-wide learning goals and sub-divided each one into four more specific learning outcomes. This gave us a set of thirty-two learning outcomes that we then distributed across our thirteen requirement categories, making sure that each outcome was assigned to at least two different requirements. The result was a comprehensive curriculum map that could be used to organize an assessment cycle for the new general education core curriculum. By assessing two broad learning goals each year and tracking the four related outcomes for each learning goal into the various courses responsible for those objectives, we could collect relevant student work annually and complete the full assessment cycle every four years.

The new eportfolio process follows a similar schedule for assessing the broader general education program across campus. Because the eportfolio indexes each artifact according to which learning goal it addresses, it is easy to compile a representative sample of student work for a given goal for assessment purposes. We recruit a small team of faculty members from our different academic units to spend two or three days after the end of the spring semester to score a cross-section of eportfolios with rubrics that measure students’ work in terms of how well they understand the learning goal and their level of achievement of that goal.

After four weeks of summer work, our team had produced a full vision for a new approach to general education and had gained the approval of our advisory group. When the fall 2013 semester began, we presented the proposal to the university faculty and solicited their feedback. By November, we were ready for a faculty vote. The proposal was approved by a 70 percent majority, with virtually none of the acrimony that can often accompany a reform of general education requirements. We attribute this outcome to the iterative approach that we took, both in developing and defining our shared learning goals, and in the design of the eportfolio process and the new general education core curriculum.

LEARNING GOALS FRONT AND CENTER
The result, which we launched with the 2014 incoming class, is a fresh and collaborative approach to general education that places our learning goals front and center: they drive the eportfolio process, shape the core curriculum, and are tracked to courses in every undergraduate major across the university. They also provide a framework for students to interpret and document their learning in the cocurriculum, helping them to articulate the role of these experiences in their university education. The collaborative process of formulating a set of shared outcomes required patience, faculty engagement, and administrative leverage from the provost’s office, but it produced rich dividends. The resulting framework for general education communicates our educational aims, coordinates our teaching efforts across the campus, and organizes, clarifies, and displays our students’ learning in a powerful way.*
Creating an Eportfolio Culture on Campus through Platform Selection and Implementation

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Given the initial excitement in the early 2000s about the potential of eportfolios for advancing integrative learning and authentic assessment in higher education, one might imagine that eportfolios would be ubiquitous in the academy, replacing final exams, cumbersome assessment processes, resumes, and even transcripts. The reality is much more meager. A recent Educause survey (Dahlstrom, Walker, and Dziuban 2013) reports that 57 percent of higher education campuses have "made some use" of eportfolios, but only at a program or course level. However, the promise of eportfolios as a broadly used tool for enhancing student learning and advancing authentic assessment is yet to be seen. The rate of eportfolio adoption follows Rogers’ (2003) Diffusion of Innovation theory, which describes the process of adopting of new technologies over time with the standard bell curve illustrating the process. The theory asserts that innovation starts with innovators, of course, and that, by definition, they are limited in numbers. The next group to follow a new technology are the early adopters. It is at this stage that many campus eportfolio projects get stuck. A few enthusiastic stalwarts rally their colleagues and harangue their students to adopt this amazing learning tool but often end up continuing to talk with each other at that next eportfolio faculty development event. The theory posits that there is a breaking point, called the chasm, that must be gotten through to get to the pinnacle—early and late majority adoption of technology. (At the tail end of the technology adoption model are the laggards.) The question becomes, how do we spread the use of eportfolios beyond our innovators and early adopters? This article describes one institution’s current attempt to move a long-standing practice of eportfolios to a majority of users, along with what we have learned in our journey. Perhaps our lessons will help those who also wish to move their eportfolio use in higher education forward.

THE PORTLAND STATE STORY
Portland State University (PSU) is an urban campus located in the heart of downtown Portland. It is the largest university in the state, with more than 28,000 students enrolled in undergraduate and graduate programs. It is Oregon’s most diverse state university and also boasts a large transfer population.

In 1994, PSU launched its four-year interdisciplinary general education program, University Studies. From the start, portfolios were seen as a way to enhance student learning and assess the program. In 1998, we started using eportfolios in University Studies’ yearlong Freshman Inquiry courses. Soon, nearly all of our Freshman Inquiry courses were using eportfolios. Despite the technological challenges encountered in these early days of web-developed portfolios, faculty and students saw the value added in using eportfolios. Labissiere and Reynolds (2004) highlight the advantage of an eportfolio over a hard copy portfolio. Especially relevant is the impact on student intellectual and personal growth. An eportfolio allows students to consider multiple audiences, forcing a critical lens on what they share and why. With the ability to hyperlink on a webpage, students are also more easily able to
make connections between and across what they have learned, creating opportunities for deeper critical thinking.

Our intention was to carry the eportfolio into all levels of our University Studies courses and beyond. This happened on a limited scale. Some of our Sophomore Inquiry and Senior Capstone courses began to use eportfolios. Some individual courses in majors also began to use eportfolios. But the hope for a proliferation of eportfolio use was not achieved. While the majority of Freshman Inquiry students (more than 1,000 students each year) created an eportfolio, few encountered one again in their academic careers. If they did, it was unlikely that the portfolio would be related to their previous portfolios and would probably be hosted on an entirely different web platform. The dream of creating a rich portfolio process that could follow students through their academic career was just that, a dream.

We in the eportfolio field often say that it is the pedagogy that matters, and while this is still true, the technology matters too. Some of our difficulty in moving an eportfolio initiative across our campus was related to not having a university-wide supported technology platform. The investment a faculty member and a student must make to learn and manage a technology tool might just feel too large.

Without a shared platform across campus, several problems had arisen. For students, it meant that they could not use their eportfolio across programs and courses. In addition, they often had to learn a new platform, which focused them on learning the technology rather than learning through the content and process. Without a shared and supported platform, there was no technical support for learning or troubleshooting problems. This lack of centralized support also contributed to faculty reluctance to invest in the eportfolio process. In the almost twenty years since our initial foray into eportfolios, interest and use had grown, but to move its use beyond the early (and now middle-aged) adopters, we needed to address the technology issue.

Both the small and large meetings served as an opportunity to educate our community about eportfolios and the potential they have to improve learning and assessment on our campus.

AN OPPORTUNITY AND A STRATEGY
In 2013, the PSU provost, Sona Andrews, announced her Provost’s Challenge to fund projects aligned with “reTHINK PSU,” a PSU presidential initiative. This initiative is a campus-wide effort to deliver an education that serves more students with better outcomes, while containing costs through curricular innovation, community engagement, and effective use of technology (ReThink PSU, n.d.). A group of faculty proposed a project, Making Learning Visible: An Eportfolio Initiative to Transform Learning and Assessment at PSU. The proposal was primarily to obtain funds to acquire and support an eportfolio platform. But, in addition, we aimed to develop an eportfolio culture on campus through the process of acquiring the platform. The project leadership team consisted of a small group of faculty and staff who were already eportfolio users and enthusiasts. The team decided that we would organize our work around three general steps: platform procurement, early implementation, and expansion. We will describe the process and the lessons learned in each step.

PROCUREMENT
The procurement process started in fall 2013 and culminated in purchasing an eportfolio platform, PebblePad, which PSU began to pilot in fall 2015. We could have created a quicker process, but in the time we took to engage our community in selecting the platform, we gained excitement and momentum in using eportfolios on our campus. We decided to involve all possible stakeholders. There were certainly individuals in the institution who had some interest in eportfolios and they were, of course, invited in the conversation. However, we also identified those who might possibly be interested in eportfolios and invited them also. Early in the process, the leadership team held small meetings inviting these stakeholders to think about the possibility of eportfolios. You might call this intrusive inclusion. We then held several large meetings with the intent of asking these stakeholders and potential stakeholders for their help in selecting a university-wide eportfolio platform. Both the small and large meetings served as an opportunity to educate our community about eportfolios and the potential they have to improve learning and assessment on our campus. We also gave those involved an opportunity to imagine possibilities of using an eportfolio in their context, something that many had never considered.

From these early discussions, the project leadership team decided that we needed three work groups to help name the criteria we would use in our Request for Proposal (RFP) to eportfolio vendors. These work groups were Pedagogy, Assessment, and Technology. Stakeholders selected the work groups they wanted to participate in, and each
group was facilitated by a leader. These meetings were held once every two weeks. There was good participation, and faculty and staff were eager to learn and share ideas about what should be included in the RFP. It was a learning experience for all of the participants. For example, it was impossible to talk about the requirements for pedagogy without talking about pedagogy in general—sharing ideas about assignments, addressing diverse student needs, and talking about concepts such as student-centered learning and self-directed learning—as well as the role an eportfolio could play in a student's learning experience at PSU. Participants left these meetings feeling energized, inspired, and knowing that their ideas could make a difference.

The ultimate RFP was unwieldy and asked for way more than any software could deliver. However, the discussions allowed stakeholders to consider with some depth what was possible and what was most important. In the end, participants felt their voices were heard and their constituents' needs were being addressed. The RFP was released, and six vendors expressed interest. We invited four vendors to come and present to the campus community. We made sure that these big public forums were advertised widely. The events were well attended and were videotaped so that those who couldn’t come were still able to participate. We solicited opinions about the platforms via an online survey, but participants were encouraged to give feedback in whatever way they wanted. These events, again, were learning opportunities for our community. Those who had not been involved, but were curious, learned more about eportfolios and their potential for learning and assessment in their context.

Ultimately, the project leadership team recommended to the Vice Provost in charge of the Provost’s Challenge that we use PebblePad. PSU is one of the first North American schools to work with PebblePad, which is located in the United Kingdom and used widely in Europe and Australia. We were attracted to the idea that the platform is actually more than an eportfolio tool; it is a personal learning environment. It is a place where students can plan and document their experiences and thoughts as well their achievements. While not designed to be a Learning Management System, it has the capability of delivering content and managing submissions and online conversations. In addition, being one of their first customers in the American market meant that we could have a collaborative relationship in future development of the product. More information about the procurement process through the Provost’s Challenge project can be found at https://www.pdx.edu/oai/provosts-challenge-projects-169.

Lessons Learned
The biggest lesson we learned is that the involvement of many people, current and potential stakeholders, worked. There was a buzz on campus. We had the advantage of being one of the Provost Challenge projects and people were curious on that basis alone. They may have gotten in the door on the basis of their curiosity, but they stayed because we invited them to actively participate in a process that could or would have an impact on their practice at the university. Through our intrusive inclusion of multiple and perhaps unlikely stakeholders, ownership of the eportfolio on our campus broadened. It wasn’t just one of those things that some departments did; it became something I might do in the near future. This process created new eportfolio champions on our campus—programs and people who were eager to engage in an eportfolio process and use the platform. We were also reminded of the need for and reward gained by creating the time and space to discuss issues of learning in the academy. The small and large group meetings, the work groups, and the public forums all provided opportunities to connect and learn across departments and disciplines.

IMPLEMENTATION
At the tail end of the procurement process, the project leadership team began to plan for the next stages. While procurement of a platform was the aim of the Provost Challenge project, just purchasing a product would not be enough to support our movement beyond initial adopters. Leadership for the project has shifted. There is now shared responsibility for the eportfolio process in centralized offices on campus. The Office of Academic Innovation (OAI), our faculty development center, is now responsible for helping onboard and support faculty who want to use PebblePad, and the Office of Information Technology (OIT) is now responsible for supporting the technical backend of the product as well as students who are using the platform. A faculty-in-residence for eportfolios and Integrative Learning in the initial pilot year was established. In addition, a Stewards group was formed with those from the project leadership team who wanted to continue and expanded to include newly identified eportfolio enthusiasts with the role of stewarding the project forward.

With this authority in place, a roll-out plan was developed with the Stewards group. We agreed that it would be best to start with a diversity of programs developed by those who wanted to be in a pilot group and would commit to participating in a several-day PebblePad Academy at the beginning of fall term and ongoing community of practice meetings. We included groups in the pilot projects that represented a variety of uses of the platform with the idea that we can create use-cases from which others on campus could learn. Some are from academic programs, offered both face-to-face and online; some are extra-curricular programs. One pilot involves faculty using PebblePad to create...
their own Promotion and Tenure eportfolios. In addition, OAI has organized professional development activities involving eportfolios and PebblePad. Two of the most recent campus-wide events included international speakers on eportfolios. The platform is available to any PSU faculty, staff, or student, and while not widely advertised yet, word of mouth has brought new users to OAI to learn about the new platform and how it can be used.

Lessons Learned
Beyond the initial procurement process, the university has invested in the new platform by centralizing services to faculty and students through OAI and OIT. The impact of this has been great. Faculty and student questions are addressed quickly. Staff in these offices are eager and able to create resources. Prior to this, program, faculty, and students who wanted to use eportfolios were on their own. This centralized support in well-established services on campus will make the integration of the new platform sustainable. In addition, we have learned the importance of maintaining and nurturing the learning community that developed in our PebblePad Academy. Those of us who are actively using the tool contact each other to celebrate our successes and help each other with problems. In addition, OAI has hosted initial adopters’ reunions. One such reunion was focused on a discussion of possible research agendas that could be developed from these projects. Lastly, we have learned that faculty and students are interested in learning more about how to use PebblePad. As more people learn about the platform, the numbers of calls and emails have increased.

EXPANSION
The Stewards group is currently refining our original vision for the eportfolio project as well as our five-year plan. We have identified constituents we would like to engage in eportfolios, including our partnerships with high schools, community colleges, and alumni. One important area that seems to have potential for creating an eportfolio culture is the use of PebblePad for promotion and tenure and other appraisal processes. As faculty and staff become familiar with the software, they will likely see the utility of using PebblePad with their students. While we had wondered if we would need to do a lot of outreach and education to get buy-in, it is clear that, instead, we will have to manage the demand for getting involved.

Lessons Learned
We have learned that we need a clear process for onboarding new projects using eportfolios and PebblePad. Learning new software and changing pedagogical practices is challenging. Acquiring a platform is not the end of this journey. While we chose the platform because it offered more than just an eportfolio, it has not been easy learning about and using all of its functionality, even for our professional staff in OAI and OIT. Also, in bringing a system that is student-centered, we are needing to redefine how we provide support services to our students. OAI is focused on providing support for faculty, while OIT is tasked with providing support for students. However, OIT’s focus has been on supporting students with use of the technology and not on supporting them with the learning process. The boundaries of the platform demand that we consider student learning and support outside of the traditional classroom context. Finally, we are learning that to sustain and continue to grow interest and use, we must continue to promote and support new users. Without this, we will have a few more initial adopters, but we will not get to a “majority” user status.

CONCLUSION
Selecting a centralized and supported eportfolio platform has paved the road for PSU to fully realize the promise of eportfolios in advancing learning and creating authentic assessment. Faculty and students now have the basics for creating a rich and connected learning experience. Our journey with eportfolios started with a focus on student learning and the development of processes that were aided, but sometimes hindered, by the lack of an easy to use, single platform. With the introduction of PebblePad, we are addressing this issue. The future, however, is dependent on how we use this new base to further to innovate and support our campus community in continuing to put student learning first. The platform remains a tool for learning; the work behind the tool is still most important.

REFERENCES
Eportfolios, Assessment, and General Education Transformation

David Hubert, assistant provost for learning advancement, Salt Lake Community College

Salt Lake Community College (SLCC) is an urban, multi-campus institution that has been on a twelve-year journey to improve its general education program and assess essential learning outcomes. Over the course of our journey, we have learned much about how students are actually experiencing general education, and about the strengths and limitations of using eportfolios to assess student learning.

A 2004 visit from our regional accrediting body made us acutely aware that our general education program lacked learning outcomes and was only being assessed indirectly using surveys that asked graduating students whether they were satisfied with their experience. Clearly, we had much to do. We gathered a committee of faculty, academic administrators, and student affairs staff that worked diligently in summer 2005 to write a set of joint institutional and general education learning outcomes that passed the faculty senate in the fall of that year. Our curriculum committees then worked for two years to ensure that those high-level learning outcomes were translated in increasing detail into program- and course-level learning outcomes, because we wanted to be able to collect data only once—in courses, using actual student work—and use that data to assess academic programs and general education.

EPortfolio Implementation
At the same time that we embedded learning outcomes at all levels of our institution, a handful of faculty in a variety of disciplines used a Utah Higher Education Technology Initiative grant to begin piloting eportfolios in their courses. They experimented with different eportfolio platforms, talked with each other about their relative merits, and played around with how best to use eportfolios in the classroom. After four years of valuable experience piloting eportfolios, learning from other institutions such as La Guardia Community College, and reading the small but growing literature on the potential for eportfolios, we decided in 2009 to put forward a proposal to implement eportfolios as a requirement in all general education courses. After considerable discussion in curriculum and faculty governance bodies, the proposal passed and was implemented in summer 2010.

The basic principles of our eportfolio implementation are simple but have had a powerful impact on the institution and on student learning. Electronic portfolios are not a graduation requirement, but they are a required component of every general education course. Students maintain one integrative eportfolio, and faculty in each general education course ask students to archive at least one signature assignment and reflection from the course.
they want to showcase. Faculty design their own reflection prompts, but on our faculty support site (www.facultyeportfoliosresource.weebly.com), we provide them generic ideas such as the following:

- Make connections between this general education course and others you have taken.
- Make connections between your academic work and your life or the broader world.
- Explain how your performance on this signature assignment demonstrates your progress toward general education learning outcomes.
- Reflect on your thought processes or actions as you faced the challenges of completing the assignment itself.

Learning outcomes are further reinforced on the “goals and outcomes” page of a student’s portfolio. In addition to listing their personal and professional goals on that page, students also list SLCC’s general education learning outcomes. We encourage students to link from each outcome to evidence in the portfolio indicating that they are attaining it.

**PORTFOLIO CULTURE DEVELOPING SLOWLY BUT SURELY**

Our eportfolio requirement in general education has been in place for six years now. We have discovered that it takes a long time to develop an institutional eportfolio culture and what Penny Light, Chen, and Ittelson (2012) call “folio thinking” at such a large institution, but we are making progress. We find that student understanding of and appreciation for eportfolio is highly dependent on how individual faculty treat it in their courses. If a critical mass of a student’s instructors incorporate eportfolio effectively in their courses—instead of making it an add-on to an otherwise unchanged course—students begin to understand that eportfolios are a means of documenting and reflecting upon their learning.

In a spring 2015 faculty survey that had a surprisingly good 17 percent response rate for an emailed instrument, 62 percent of the respondents thought the eportfolio requirement had a “very” or “mostly” positive impact on the general education program, and 61 percent said that it had a “very” or “mostly” positive impact on students’ ability to demonstrate their progress toward general education learning outcomes. In both cases, only 8 percent of the respondents said that it had a “very” or “mostly” negative impact. Similarly, 56 percent of the respondents thought that eportfolio had a “very” or “mostly” positive impact on students developing a sense of ownership of their education, with only 11 percent saying that it had not.

We have evidence that eportfolios are helping students better understand and intentionally work toward general education learning outcomes. In spring 2010—the semester before eportfolio implementation—I added a new question about learning outcomes to a student survey conducted in random on-campus (not online) general education courses. At that time, 27 percent of the students said that they had been introduced to SLCC’s general education learning outcomes in the course in which they took the survey. In spring 2015—five years after implementation of the eportfolio requirement—I repeated the question in another random sample of general education courses. Now 62 percent of the students said that they had been introduced to the general education learning outcomes in the course.

Our faculty-led general education committee plays a large role in the development of portfolio culture. Each general education course comes up for review every five years. We revamped the review process in several important ways. Each course is assigned two mentors from the general education committee who work with the faculty bringing the course for review. They provide important pre-review advice and feedback that greatly increase the chances that the committee will approve the course. Once the course reaches the committee, members scrutinize its signature assignments, eportfolio integration, and reflective practices. Our intent is for the general education course review process to be a form of collaborative faculty learning, because faculty on the committee get to see a variety of positive ways of integrating eportfolio into courses.

**ASSESSING GENERAL EDUCATION WITH EPORTFOLIOS**

We have come a long way on general education assessment. After our ten-year accreditation visit in 2014, SLCC received a commendation from its regional...
accreditor for the way we use eportfolios to assess general education learning outcomes. Every May our institutional research office pulls a random sample of 100 students who have just graduated with an Associate’s degree and who have taken all of their general education courses from SLCC. Our eportfolio coordinator organizes teams of faculty who apply modified VALUE and homegrown rubrics to those students’ eportfolios.

Our assessment teams look for data that answer two kinds of questions, the first of which might seem a bit rudimentary but is nonetheless critical: Do our graduates get enough experience in doing the kinds of assignments and reflection that would give them a reasonable chance of attaining general education learning outcomes? We have found that eportfolio assessment often helps us answer this question.

Basic information literacy is one of our general education learning outcomes where eportfolios have given us great insight. Do our students get enough experience conducting research using outside-of-class materials and credible sources, and properly citing those sources in their work? Data from our most recent assessment report illustrate a pattern we’ve seen every time we conduct this kind of assessment. About half of our students had considerable evidence (four or more signature assignments) of conducting outside-of-class research, while only 42 percent had considerable evidence of using credible outside sources, and only a third had considerable evidence that they can adequately cite their sources. This data inform our efforts to better target time and resources toward improving information literacy instruction.

Our assessment teams also use components of the VALUE rubrics to determine how well our Associate’s degree graduates are doing as they move from sophomore to junior status. In particular, they apply pieces of the VALUE rubrics dealing with written communication, quantitative literacy, and critical thinking. For example, we are interested in knowing whether students are using genre conventions and effectively developing content in their writing, so one assessment team used those elements of the VALUE rubric for written communication to assess student writing in three courses: their second-semester writing composition course, the course they use to satisfy their Humanities distribution requirement, and the course they use to satisfy their American Institutions core requirement. We modified the VALUE rubrics to accommodate multiple assignments and produce an average score for each student’s body of written work.

Tables 1 and 2 illustrate the kinds of data we are getting when we apply VALUE rubrics for written communication to student work in their general education eportfolios. It is very useful indeed to be able to get this high-level look at student writing, because it allows other academic programs to benchmark their more detailed assessments of student writing. It also allows department chairs and our Faculty Development Center to use the data to structure professional development opportunities for full-time and adjunct

| TABLE 1. PERCENTAGE OF STUDENTS WHOSE MEAN SCORES FOR EFFECTIVELY USING GENRE CONVENTIONS FELL INTO THE VALUE RUBRIC RANGES (OVERALL MEAN, EXCLUDING THE “NO EVIDENCE” STUDENTS = 2.37) |
|----------------------------------|---|---|---|---|---|
|                                 | 0 Evidence | 1 | 2 | 3 | 4 |
| 15%                             | 21%         | 35% | 20% | 9% |

Student had no writing assignments in this portfolio from ENGL 2010, AI, and HU courses.

| TABLE 2. PERCENTAGE OF STUDENTS WHOSE MEAN SCORES FOR CONTENT DEVELOPMENT FELL INTO THE VALUE RUBRIC RANGES (OVERALL MEAN, EXCLUDING THE “NO EVIDENCE” STUDENTS = 2.45) |
|----------------------------------|---|---|---|---|---|
|                                 | 0 Evidence | 1 | 2 | 3 | 4 |
| 15%                             | 16%         | 36% | 24% | 9% |

Student had no writing assignments in this portfolio from ENGL 2010, AI, and HU courses.
faculty. Finally, we are somewhat emboldened to know that when the “no evidence” student portfolios are set aside, our data looks quite similar to the Multi-State Collaborative pilot-year data for community colleges.

THE CHALLENGES AND REWARDS OF EPORTFOLIO ASSESSMENT OF GENERAL EDUCATION

Using eportfolios to assess general education at a large community college is not without its difficulties, two of which I would like to highlight here. A portfolio contains a large volume of assignments and reflections, and the reviewers usually do not know the details of the assignments or the reflection prompts the faculty gave to the students. Necessarily then, assessment of something as large and diverse as a general education program has to be cast at a certain level of generality, but not so general that it does not provide useful data. Thankfully we have found that many components of the VALUE rubrics are well suited to eportfolio assessment of general education, and we have concentrated on using them effectively and then closing the loop on the assessment.

The other difficulty we’ve encountered, albeit one that has lessened in the past six years, has to do with faculty and student compliance with the eportfolio requirement. We will feel more comfortable with the validity of our assessment data when eportfolio culture and folio thinking become universal at SLCC and the percentage of portfolios with “no evidence” in key areas drops closer to zero. We have made tremendous progress in this regard—primarily through professional development and the course review process of the general education committee—but know that we still have work to do.

As useful as our annual assessment reports have been, and as gratifying as the commendation from our accreditor has been, even more important to us is the way that eportfolios have opened up general education at SLCC. We have a larger shared sense of responsibility for general education, and we know so much more about how what Yancey (1998) calls the “delivered curriculum” is actually experienced by students. It is one thing to know about the inputs—the courses that students take—and quite another to be able to see the outputs of general education in the form of signature assignments and student reflections. Our eportfolio requirement has given us a great tool with which to knit together a menu-driven general education into a more integrative experience for students, and it has provided students with a roadmap that helps them understand and more intentionally achieve essential learning outcomes.

REFERENCES


AAC&U MEETINGS

NETWORK MEETINGS

Global Learning and the College Curriculum: Nurturing Student Efficacy in a Global World

October 6–8, 2016
Denver, Colorado

Transforming Undergraduate STEM Education: Implications for 21st-Century Society

November 3–5, 2016
Boston, Massachusetts

General Education and Assessment

February 23–25, 2017
Phoenix, Arizona

Diversity, Learning, and Student Success

March 16–18, 2017
Jacksonville, Florida

Global Learning and the College Curriculum

October 12–14, 2017
New Orleans, Louisiana

Transforming Undergraduate STEM Education

November 2–4, 2017
San Francisco, California

www.aacu.org/meetings
Using Eportfolios to Deepen Civic Engagement

Nancy J. O’Laughlin, educational technology consultant, Information Technology–Academic Technology Services, University of Delaware
Susan T. Serra, assistant director of service learning, Community Engagement Initiative, University of Delaware

Directed reflection, an important aspect of service learning, helps students make connections between theory and practice. Student reflection of this kind can take many forms, from contemplation in informal journals to formal papers to presentations. This article explores the practice of using an eportfolio to develop an immediate, ongoing, reflective conversation throughout a summer with a subset of students who participated in University of Delaware’s service immersion program, the Service-Learning Scholars Program.

Since September 2005, the University of Delaware (UD) has required all incoming students to earn at least three credits of discovery-based or experiential learning (e.g., participation in an internship, undergraduate research, study abroad, or service-learning course) in fulfillment of their degrees. This requirement is part of a larger general education initiative, which also includes the following learning objectives: (1) communicate effectively in writing, orally, and through creative expression; (2) work collaboratively and independently within and across a variety of cultural contexts and a spectrum of differences; and (3) evaluate critically the ethical implications of what they say and do.

From our ten years of experience working with the Service-Learning Scholars Program, we found that in order to meet those learning objectives, directed reflection is imperative. Each scholar has a discipline-specific faculty mentor, in addition to an instructor who guides all scholars during the course of the program. The instructor, from the Office of Service Learning, brings the scholars together weekly to provide them with a global perspective to structural barriers that cross the disciplines. The instructor has used a combination of reflection journals and reflective discussions to foster deep learning. Last year, in response to some still-unmet needs by both the scholars and their instructor, it was found that reflection could be enhanced through the use of an eportfolio. Scholars used a number of modalities to reflect on responsibility, critical thinking, partnership, and sustainability as part of the eportfolio. This article will share what was learned from this pilot project and includes feedback from scholars and the instructor regarding this practice.

Each scholar has a discipline-specific faculty mentor, in addition to an instructor who guides all scholars during the course of the program.

BACKGROUND
UD’s Service-Learning Scholars Program, which began in 2005, is a full-time summer immersion program in which twenty-five to twenty-eight students are funded each year to engage 300 hours on a community project and 100 hours on research, reading, and reflection with their faculty mentor. Scholars are expected to earn three academic credits either in preparation during the spring prior to their placement, in concluding their project in the fall following their placement, or in some combination of the two. Scholars may come from any college; projects may range from direct service to behind-the-scenes work to planning for endeavors that take place during the academic year.
In this immersion-learning experience, scholars spend the bulk of their week working in the community and one-quarter of their time in academic reading, research, discussion, and reflection. They all participate in a weekly seminar throughout the summer experience, guided by the instructor.

During summer 2005, the instructor met semi-regularly with individual scholars to discuss their progress. However, in end-of-summer evaluations, many scholars noted that while the summer was transformative, individually they felt very isolated. They expressed a desire for a community of other scholars with whom to share their experiences.

**A NEW FOCUS FOR DIRECTED REFLECTION**

The following year, the instructor introduced a biweekly seminar that brought the scholars together to discuss what it meant to work within a community. At one of these meetings, a scholar shared an incident that provided a focus for the new seminars. This scholar, who was working at a local summer program, was upset about two young children who had been left in a park early in the morning to await the opening of camp. The other scholars listened attentively, and those working with children concurred they too had encountered what they believed to be irresponsible parenting.

The instructor was struck by the rush to judgment. Did they truly have enough information to make that judgment? The class began to discuss what knowledge they did have—and whether it was enough to determine these parents were really neglectful. During the discussion, it became clear the scholars genuinely cared for whoever they were directly working with but tended to blame their situation on unknown family members. It was obvious the scholars had little or no context for thinking about the reality of the lives of the people in the community, the lives of people they were working with. This incident provided a new focus for the scholar seminars.

Scholars now would be given opportunities to think more deeply about how very difficult it is to live on the margins. They would be asked to explore beyond their own experiences.

Through several iterations of experimenting with different texts, two were found that really resonated with the scholars and helped make the weekly discussions more thoughtful.

*The Other Wes Moore* was a great way to explore the concept of cultural capital and its impact on individual lives (Moore 2011). It was also an opportunity to discuss what it means when your cultural capital is not the same as the larger society and may in fact be devalued (like the decision made by the parents of the children in the park). It was a means for a substantive conversation about privilege.

A radio archive from *This American Life*, “Three Miles” explored the unintended consequences of an exchange program between an elite private high school and a poor urban public high school (specifically, what happens when a student from the public school realizes that her education has been designed to train the kids in her high school to “open doors and check out groceries” for the elite) (Jaffe-Walt 2015). This provided a catalyst for considering the arrogance of thinking we know best how to solve a problem without listening to everyone involved, continuing the discussion of privilege.

In addition to the discussions, scholars kept written journals in which they responded to a set of formal reflection questions. The journals were collected three times during the summer, with the instructor reading and commenting on their responses. Unfortunately, by the time the instructor had finished commenting on the end-of-year synthesis, the scholars had already moved on. While the discussions were interesting, the journaling process was vaguely unsatisfactory for both scholars and the instructor.

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### Figure 1. Eportfolio Rubric (Serra, S. and Pusecker, K. L.)

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context; Connection to Discipline</td>
<td>Frames particular project in context of regional, national, or international issue; understands and states current state of issue.</td>
<td></td>
<td></td>
<td>Does not see beyond particular project.</td>
</tr>
<tr>
<td>Writing and Oral Communication</td>
<td>Can effectively write about and discuss issues surrounding community challenges and can relate economic, social, and cultural tensions to the social issue.</td>
<td></td>
<td></td>
<td>Cannot relate project to economic, social, and cultural issues, beyond immediate problem.</td>
</tr>
<tr>
<td>Social Capital</td>
<td>Describes the concept of social capital; can connect to decision making.</td>
<td></td>
<td></td>
<td>Has rudimentary understanding of social capital.</td>
</tr>
<tr>
<td>Communities</td>
<td>Recognizes a community’s strengths; can identify people and institutions within the community working for change.</td>
<td></td>
<td></td>
<td>Can only describe a community’s needs; cannot identify assets.</td>
</tr>
<tr>
<td>Solutions</td>
<td>Describes sustainable solutions; describes solutions that are community led.</td>
<td></td>
<td></td>
<td>Unable to identify long-term solutions.</td>
</tr>
</tbody>
</table>
The instructor also found that while the texts used caused scholars to grapple with the idea of poverty as a complex social structure, the downside was that scholars, while less likely to blame individuals for their own situation, instead saw these communities as a bundle of needs. These two driving issues, a need for a better written reflection process and a desire to have scholars view communities in their totality, were awaiting a catalyst for change.

**EPORTRFOLIO AS THE SOLUTION**

The idea for an eportfolio came about by accident when the instructor taught an independent study for a student doing a service project in Cambodia. Because location was remote, some technologies were not available to facilitate student–instructor interaction. To bridge this gap, they began using Google Docs to communicate. There was an immediacy to their Google Doc conversation the instructor recognized was missing in the Summer Scholars Program. Wanting to capture this idea of an ongoing conversation with the scholars, but uncomfortable with managing many Google Docs for all of the scholars, the instructor turned to the university’s Center for Teaching and Assessment of Learning and Academic Technology Services for assistance. A solution was sought that could provide more timely feedback to the scholars throughout their community service experiences.

The director of educational assessment in the Center for Teaching and Assessment of Learning helped the instructor formally map out the reflection questions and activities and create a set of learning goals. A rubric was developed to demonstrate to the scholars the type of responses expected. It was designed to provide two poles (either meets standards or doesn’t meet standards). Anything in between was either closer to meeting standards or vice versa (see fig. 1).

An instructional designer in Academic Technology Services worked with the instructor to design and develop an eportfolio that would meet the program’s needs. It was an opportunity to rethink reflection, for example. Scholars often retained artifacts from their work with community partners (e.g., articles written for the agency or local newspapers, videos) and, as part of an eportfolio, these items could be included as evidence of scholars’ learning. The instructional designer encouraged the instructor to think about this project as creating more than just an electronic reflection journal. Instead it could become a means of collecting samples of student learning.

As scholars collected evidence of community collaboration over the summer, they reflected on both the development of their partnerships and their reciprocal learning. The eportfolio provided a way for scholars to answer the questions (1) How has your perspective changed about yourself, your community, and/or the world in general? and (2) What aspect of your summer had the most impact on your change in perspective? The eportfolio served as an ongoing scholar–instructor dialogue with the opportunity for scholars to share with wider audiences, if they wished.

The eportfolio allowed the instructor to assign reflection questions that went beyond written responses to questions (e.g., artifacts, or an interview with community partner). This assignment allowed scholars who produced weaker written responses to articulate their thoughts in other formats. For another project, scholars were asked to provide three to four photos with captions that identified community strengths and assets. Without defining what was meant by a strength or asset, the instructor encouraged scholars to think creatively about visually representing these ideas. What the instructor received was deeply thoughtful, individually defined themes around community engagement. This combination of image and words clearly allowed the instructor to know the students were (1) thinking carefully about social justice and community, (2) on a continuum, and (3) all had hit the mark in a way that was not necessarily seen in their writing. Key themes they recognized through photos were kinship, shared knowledge, accessibility, cultural keystones, partnerships, fun, opportunity, and respect.

**EPORTRFOLIO DESIGN**

Since UD is a Google Apps institution, we used Google Sites for the eportfolio.
There is technical support on campus for students, and they are given access to their Google Applications beyond graduation. Scholars were provided a template site that they used to create their individual eportfolios. The template provided the structure or framework for the eportfolio with guidance available on each of the main sections: introduction, reflection, photo essay, community partner interview, and synthesis. It also included a calendar section and the rubric.

In an introductory workshop, scholars set up their Google Sites using the template and were given basic editing instructions for the site. They quickly took ownership of their eportfolios, demonstrating an increased knowledge of new technical skills, their own creativity, and a sense of pride in their work. The eportfolio was student-owned and easily customizable. It provided a place for scholars to gather all of their artifacts (i.e., articles, videos, images). It truly allowed scholars who were more multimodal focused to demonstrate their learning. The eportfolio was co-owned throughout the summer, allowing the instructor to preserve a copy upon completion of that summer’s program. After which, scholars became sole owners of their eportfolios.

**SCHOLAR NARRATIVE EVALUATION RESULTS**

Scholars were required to submit a narrative evaluation of our eportfolio program at the end of the summer, and two common suggestions were found in their appraisals. The first was to include an additional section for more informal journaling in which scholars could reflect upon the events from their week. In the second, one-third of the group requested a method of sharing their eportfolio with each other.

For the upcoming summer, the instructor will request that scholars use the “what happened this week” journal to better integrate their on-the-ground experience with the more formal weekly reflection questions.

We are still exploring the best way to have scholars share their work with each other. During the summer the scholars are wrestling with ideas about social justice, often for the first time. Not everyone’s written communication skills are developmentally ready to share with a public audience. Eportfolio entries can sometimes be raw while scholars work through their experience.

Scholar comments included:

“I found the eportfolio very helpful in strengthening my knowledge of my summer position as well as posing questions that I had not otherwise considered.”

“The eportfolio did provide a good place for reflection.”

“The idea of putting all my learning experiences into a website was very creative and rewarding.”

Faculty mentors were made aware of the eportfolio, and a few chose to be included, but most were focused on their specific projects. We are considering how best to more closely integrate faculty-mentor responses into the eportfolio.

**CONCLUSION**

Through this pilot program, we found that the eportfolio provided a way for scholars to track their deepening civic engagement. Also, use of this tool’s comments feature resulted in more meaningful instructor–scholar communication. It provided a visual representation of how scholars were thinking about their projects and a creative way to represent their learning. Use of the eportfolio created a richness in learning the instructor had not seen in paper journals. Though we have plans to refine it, we are convinced this represents a great leap forward.

**REFERENCES**


Highlights of AAC&U Work on Authentic Assessment and Digital Learning

AAC&U develops and advances assessment practices that deepen, integrate, and demonstrate student learning, through advocacy of learning-centered assessment policies, support for campus work to develop meaningful assessment approaches, and experimentation with common eportfolio frameworks. Through its ground-breaking national initiative, VALUE (Valid Assessment of Learning in Undergraduate Education), AAC&U has worked with faculty and assessment expert teams across the country to develop a set of sixteen rubrics through which institutions can evaluate cross-cutting capacities students develop across courses and programs. More than 2,000 institutions are currently using VALUE rubrics as part of their assessment plans. AAC&U has also developed the Personal and Social Responsibility Inventory, a campus climate tool designed to assess various campus constituents’ perceptions regarding opportunities for education for personal and social responsibility.

MEETINGS AND PROJECTS

The Eighth Annual Forum on Digital Learning and Eportfolio

AAC&U’s 2017 Annual Meeting theme—Building Public Trust in the Promise of Liberal Education and Inclusive Excellence—drives the focus of the Eighth Annual Digital Learning and Eportfolio Forum. The forum offers concurrent sessions and workshop opportunities for campus representatives to share the good work they are doing to enhance student learning and success and demonstrate how it contributes to improving student lives, preparing for a global economy, and participating in strengthening democracy. The forum keynote will highlight recognition of eportfolios as the “eleventh high-impact practice” for deepening student learning.

The forum luncheon plenary will showcase students presenting aspects of their eportfolios that engender student identity and agency. Through sharing dynamic components of a variety of current eportfolio platforms in use on campuses across the country, students will briefly show an example of their portfolio work that represents their agency in creating their own identities as educated persons and learners, providing opportunities for attendees to question and probe the student work.

The closing plenary will focus specifically on the power of eportfolio as a high-impact practice that can transform student lives and contribute to individual, community, and civic well-being through an engaged, culturally respectful learning practice contributing to the individual and the public good.

The Eighth Annual Forum on Digital Learning and Eportfolio will be held on Saturday, January 28, 2017, in conjunction with the AAC&U Annual Meeting in San Francisco, California. Annual Meeting registrants can participate in Saturday morning’s Eportfolio Forum sessions at no additional cost; additional registration and fee are required for the luncheon and afternoon presentations. Those not attending the Annual Meeting can register for the Eportfolio Forum as a separate event.

www.aacu.org/meetings/annualmeeting/AM17/epforum

VALUE/Multi-State Collaborative to Advance Learning Outcomes Assessment

The VALUE/Multi-State Collaborative to Advance Learning Outcomes Assessment (MSC) is designed to provide meaningful evidence about how well students are achieving important learning outcomes. Sponsored by the State Higher Education Executive Officers (SHEEO) and the Association of American Colleges and Universities (AAC&U), the initiative foregrounds a distinctly different form of assessment than the traditional standardized test. The project uses VALUE rubrics for performance levels applied to students’ authentic college work—including such things as projects, papers, and research. The MSC is designed to produce valid data summarizing faculty judgments of students’ own work and seeks to aggregate results in a way that allows benchmarking across institutions and states. The primary goal of the initiative is to provide data that allow faculty and institutional leaders to assess—and improve—the levels of student achievement on a set of cross-cutting outcomes important for all disciplines.

KEY PARTNERSHIPS

Association for Authentic, Experiential, and Evidence-Based Learning

The Association for Authentic, Experiential, and Evidence-Based Learning (AAEEBL) is the leading professional association for faculty and practitioners focused on electronic portfolios and their promising role as a vehicle for demonstrating student learning of the LEAP Essential Learning Outcomes. AAEEBL sponsors regional and international conferences, a newsletter, and an electronic journal devoted to supporting authentic assessment of student work for learning achievement and quality. AAEEBL is a cosponsor of the Annual Forum on Digital Learning and Eportfolio at AAC&U Annual Meeting and in July in conjunction with the EduTech conference.
The ongoing digital revolution has created a complex and interconnected ecosystem that is fundamentally reshaping how we learn and communicate. Yet, despite its transformative potential, this digital ecosystem has so far had less of an impact on formal education than on other sectors of our society. Authors Randy Bass and Bret Eynon explore the implications of emerging digital capacities and culture for higher education, arguing that any discussion to reinvent higher education that begins with technology is doomed to a diminished vision of learning. Bass and Eynon begin instead by reimagining the core purposes of liberal education in this new context and ask: What is the role of the digital ecosystem in making a quality liberal education available to all, equitably? Going beyond “unbundling,” the authors propose that we use networked and adaptive systems to “re-bundle” higher education by connecting learning experiences that have typically been disconnected, opening the boundaries of institutions, and creating new integrative contexts for transformative learning.

Winter 2014 Peer Review

E-Portfolios: For Reflection, Learning, and Assessment

E-portfolios are now being used in more than half of US colleges and universities. This Peer Review provides examples of how engaging with e-portfolios enhances student learning and can be used for assessment and students’ professional preparation and job searches. The issue illustrates the multiple ways in which e-portfolios are being used on campus to enhance student success, as well as the evidence of e-portfolios’ positive effect on student learning.

Electronic Portfolios and Student Success: Effectiveness, Efficiency, and Learning

This publication presents an overview of electronic portfolios and ways individuals and campuses can implement e-portfolios to enhance and assess student learning, recognizing that learning occurs in many places, takes many forms, and is exhibited through many modes of representation. It is organized around eight issues central to implementing an e-portfolio approach: defining learning outcomes; identifying stakeholders; designing learning activities; including multiple forms of evidence; using rubrics to evaluate e-portfolios; anticipating external uses of evidence; and evaluating the impact of e-portfolios. This work is illustrated through multiple campus case study examples.

Using the VALUE Rubrics for Improvement of Learning and Authentic Assessment

This publication addresses key elements of, and questions frequently raised about, the development and use of the VALUE rubrics for assessment of student learning. It provides information about rubric-based assessment approaches—including validity, reliability, and rubric modification—and faculty training in the use of rubrics. Specific examples of how campuses are using the VALUE rubrics to improve student learning are also provided. Full case studies from twelve campuses are available online at www.aacu.org/value/casestudies.
Education reform is coming, although probably not in ways you might have been thinking. There is a nascent movement to urge the Academy to change how it records learning. Why? Evidence of mastery of narrow disciplinary knowledge is not enough for many stakeholders in our society. More and more, interested parties want to know the entirety of what our learners know and what they can do. This includes supervised experiential learning opportunities, such as internships, research, co-ops, community-engaged learning, and leadership programs. These activities are often arguably some of the most transformative experiences that learners engage in on and off our campuses. Yet, these influential opportunities are rarely recorded officially.

When you examine what we are recording now at our educational institutions, you’ll find that we are documenting mostly curricular information, from general education to major requirements—essentially what is needed to complete a degree or program. Traditional academic transcripts format this information in chronological order using cryptic titles and references that are mostly only decipherable by insiders. The meanings behind the entries on this record are opaque to others outside of the Academy, and often to the learners themselves. Moreover, the current transcript demonstrates exposure and not necessarily what has been learned, nor what cognitive skills the learner possesses.

Even if we could make our curricular record more meaningful and transparent (as a few in the reform movement described below are attempting), we are failing to record and capture numerous supervised experiential learning contexts. And, in those instances where we try to note these experiences, we awkwardly shoehorn them into a course paradigm by listing them as “independent study.” This term belies the true character of these learning contexts and leaves the task of interpreting what was actually learned up to the consumers of our records, possibly adversely affecting our learners’ postgraduate opportunities.

As disruptive as it may be, today’s technology does have the power to free us from many of the constraints of the past. Up to now, we have been limited by the physical constraints of paper. Technological advances, however, allow us to be more expressive about what is learned and what cognitive skills have been acquired and mastered. This level of granularity can lead to a fuller analysis of strengths, weaknesses, and opportunities. In an ever-evolving world, continuous assessment, acquisition, and sharpening of cognitive skills are required across various situations and environments, pointing to the need for and development of the lifelong and life-wide learner.

Happily, experiments are being conducted to determine just how best to document curricular and cocurricular or noncurricular learning in an effort to showcase the cognitive skills that have been acquired. Over the past year, the American Association of Collegiate Registrars and Admissions Officers and Student Affairs Administrators in Higher Education have worked with twelve institutions in the Comprehensive Student Record project to imagine a new twenty-first-century record. With support from the Lumina Foundation, the project has spawned a wide spectrum of prototypes, such as expressive cocurricular records that call out learned skills and different electronic representations of learning, including electronic certificates, eportfolios, and badges.

With today’s digital platforms, learners can choose to showcase the skills of which they are proudest, and those that are salient and directly relevant to the task at hand. These narratives can be buttressed with formal records, such as the official transcript, and also supported by new and expressive forms of recognition, such as e-certificates and badges. We can now show the cognitive skillsets that correlate with learning work products preserved in our institutional repositories and thus illustrate what the learner knows. More importantly, the benefit of this approach can be seen in the learners themselves, who are empowered and palpably confident in their ability to effectively communicate about what they know and how they know it.
AAC&U is the leading national association concerned with the quality, vitality, and public standing of undergraduate liberal education. Its members are committed to extending the advantages of a liberal education to all students, regardless of academic specialization or intended career. Founded in 1915, AAC&U now comprises more than 1,300 member institutions—including accredited public and private colleges, community colleges, research universities, and comprehensive universities of every type and size.

AAC&U functions as a catalyst and facilitator, forging links among presidents, administrators, and faculty members who are engaged in institutional and curricular planning. Its mission is to reinforce the collective commitment to liberal education and inclusive excellence at both the national and local levels, and to help individual institutions keep the quality of student learning at the core of their work as they evolve to meet new economic and social challenges.

Information about AAC&U membership, programs, and publications can be found at www.aacu.org.

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(a 1,350 members)

- Baccalaureate 24%
- Masters 31%
- Associates 12%
- Res & Doc 17%
- Other* 16%

*Specialized schools, state systems and agencies, and international affiliates

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**Open and Integrative:**

*Designing Liberal Education for the New Digital Ecosystem*

BY RANDY BASS AND BRET EYNON

Authors Randy Bass and Bret Eynon explore the implications of emerging digital capacities and culture for higher education, arguing that any discussion to reinvent higher education that begins with technology is doomed to a diminished vision of learning.

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