

ePortfolios and Interdisciplinary Adult Degree Programs

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This article discusses the use of ePortfolios in interdisciplinary online adult degree programs at two universities. Whereas one university uses the ePortfolio only in a capstone course, the other institution introduces the ePortfolio in an introductory course that focuses on goal setting and then has students add content to the ePortfolio in the final course of their program of study. Additionally, one institution implemented the ePortfolio for assessment purposes, while the other did not. The study of these cases explores the different approaches to ePortfolio use in two interdisciplinary adult degree programs, as well as the benefits of ePortfolio use within this student population.

In 2014, adult students 25 years of age and older accounted for approximately 40% of all students enrolled in undergraduate degree programs in the United States (National Center for Education Statistics, 2015). Furthermore, some estimates indicate that more than 70% of all undergraduate students are in some way nontraditional (Ross-Gordon, 2011). This large population of students creates considerable need for degree programs, delivery methods, and instructional strategies that are consistent with adult-learner theory and responsive to adult-learning needs. Using ePortfolios in adult degree-completion programs, as demonstrated in two case studies of students at East Tennessee State University (ETSU) and Middle Tennessee State University (MTSU), provides a way for adult and nontraditional students to connect prior knowledge to their classroom learning; set program and career goals; showcase their academic work within and outside the classroom; and practice the reflection skills necessary to be proficient lifelong learners.

Literature Review

Brief Overview of Adult Learning and Goal Setting

According to early adult-learning theorists, adult students have an innate need to be self-directed in their learning. Knowles, Holton, Elwood, and Swanson's (2005) work also commented on adult motivation to learn and indicates that adults need a "what for" in their learning (i.e., they must know why it is important to learn before they undertake a learning activity). Attached to their independence, adult learners also must feel that their experiences are valued. They need opportunities to connect prior knowledge and experiences to the learning they are pursuing. Integration of ePortfolio practices into undergraduate programs designed for adult students may be one way to honor students' prior knowledge, especially if the curriculum is designed to prompt students to extend and apply their classroom learning to prior life experiences.

Goal setting and hope theories are often relevant to the study of adult learning, as well. Snyder et al. (2002) defined hope as more than just optimism. Rather, it is the ability to "develop workable goals, find routes to those goals (pathways thinking); and become motivated to use those pathways (agency thinking)" (Snyder, 2005, p. 73). According to Snyder et al. (2002), students who have high hope, and therefore more advanced goal-setting ability, perform better academically. Students with high levels of hope succeed because they have clear goals, employ study strategies with great agility, and devote more effort to those study strategies. In short, this is a "say, see, do" strategy. Students with hope say or recognize their goals, see the avenues for achieving these goals, and do so by implementing action toward achieving them (Snyder, 2005). Learning goals require strategic thinking and produce greater academic achievement (Snyder et al., 2002).

Savage and Smith (2008) applied Snyder's (2005) hope theory to adult students enrolled in degree-completion programs at the Community College of the Air Force. The researchers who conducted that study attempted to examine the associations between effective use of goal setting (or hope) and the likelihood of persistence to graduation. Students in that study with high hope were significantly more likely to graduate than those with low hope. In fact, goal-setting skill was the strongest predictor of earning a degree. Savage and Smith conclude that institutions should find ways to enhance student goal-setting ability (Savage & Smith, 2008).

Cross's (1981) seminal work points to the importance of goals to adult learners. At the time that Cross's (1981) "Adults as Learners" article was published, Cross was the Chair of the Department of Administration, Planning, and Social Policy at the Harvard Graduate School of Education. She claimed that a program was successful if it had met the learner's goals. This was true regardless of whether an adult's goal was to learn a new skill or earn a credential.

However, Cross explained that determining a learner's goals could be a great challenge, and called for more in-depth, qualitative research (as opposed to the existing proliferation of adult-student survey research) to provide a more complete understanding of learning goals. Cross contended that a deeper understanding of short-term and long-term goals would allow adult-learning providers to create richer and more fulfilling programs for adult students.

Additionally, Tovar's (2008) study of firefighters and police officers in adult degree-completion programs confirms that goal setting and program planning are essential to the effectiveness of their learning. In that study, an adult who had learned how to learn was able to develop clear learning objectives, direct his or her own learning, and develop a personal plan of action to achieve his or her learning goals. ePortfolios can help students engage in meaningful goal setting and develop hope for achieving their goals.

ePortfolio

Many researchers consider ePortfolios to be a High-Impact Practice (HIP). Eynon and Gambino (2017) in their recent book titled, *High-Impact ePortfolio Practice*, make the case for why ePortfolios should be considered a HIP. HIPs are strategies, programs, and activities that contribute to student success and persistence to graduation. ePortfolios require students to practice higher-order thinking skills, and produce a product that showcases not only their learning, but their thinking about their learning. Further, ePortfolios require students to integrate knowledge from other high-impact practices. A robust ePortfolio may require a student to reflect upon both in-class and out-of-class activity. Woven throughout a program of study, a student may reflect upon and document artifacts from a first-year course, a living-learning community, and an internship or research experience, all of which are HIPs (Hubert, Pickavance, & Hyberger, 2015; Kuh, 2008; Watson, Kuh, Rhodes, Light, & Chen, 2016). Kuh has recently discussed ePortfolios as the 11th high impact practice (Center for Engaged Learning, 2016).

Because of the ability of ePortfolios to serve a variety of purposes, many colleges and universities have implemented them in the curriculum. Chatham-Carpenter, Seawel, and Raschig (2010) surveyed higher-education institutions to determine how they were using ePortfolios. Nearly three quarters of the institutions they surveyed use ePortfolios to prompt students to reflect upon their learning. Furthermore, nearly 70% of institutions use ePortfolios to help students develop a platform through which they can showcase their knowledge, skills, and abilities to potential employers. Not as prevalent as reflection or career-related purposes,

58% of institutions report using ePortfolios for assessment and program-review purposes. Further, approximately 54% of respondents use ePortfolios to spotlight mastery of professional standards. The study also asked respondents to identify some of the challenges of using ePortfolios at their institutions. Three challenges emerged, including a lack of top-level administrative buy-in and support for using e-portfolios; combating the perceived time and effort that many faculty believe ePortfolios require; and the most frequently reported, the cultural challenge—institutions report that successful ePortfolio implementation requires changing existing constructs of teaching practice, student learning, and program assessment.

Based upon the results of their survey, Chatham-Carpenter et al. (2010) recommend four best practices for implementing an ePortfolio project at a college or university. The first recommendation includes systematic planning for the implementation and sustainability of ePortfolios. Second, the authors suggest asking early adopters to engage in a pilot. Third, institutions should use early adopters from the pilot stage to help promote buy-in to the benefits of using ePortfolios. Early adopters can function as ambassadors for transition to an ePortfolio system that can function as an assessment tool that effectively improves student development and learning. Finally, implementing ePortfolios on any campus requires training and support for both faculty and students.

Where Chatham-Carpenter et al. (2010) focused on the purpose of ePortfolios, Cheng and Chau's (2013a) research focused on the learning outcomes students were able to attain by participating in ePortfolio activities. In this study, students who earned high scores on ePortfolio assessments also reported that they engaged in a number of learning strategies, including learning from peers, self-regulation grounded in metacognition, critical thinking, organization, and elaboration. In a second study by the same authors, the researchers focus on goal setting and reflection in ePortfolio use. The study sought to determine if students' ePortfolios demonstrated performance goals (the desire to achieve at higher levels than their peers) or mastery goals (the desire to completely and thoroughly understand and improve). The study found that most ePortfolios were designed to reveal students' mastery of material, themes, and concepts. Some students' ePortfolios contained evidence of both performance and mastery goals; these students were also determined to have greater reflective ability than students whose portfolios featured mastery goals alone (Cheng & Chau, 2013b).

Indiana University-Purdue University Indianapolis (IUPUI) developed a conceptual model for ePortfolios that included four domains: increasing awareness of self and others; setting self-concordant goals;

developing hope; and shaping education and career plans (Buyarski et al., 2015). In this model, students use the ePortfolio to develop an authentic voice. Developing a strong sense of self includes evaluating personal values and beliefs, as well as examining relationships to others. Furthermore, reflection helps students determine their own goals according to their values. These self-concordant goals consist of short- and long-range goals. Students who set goals and monitor their progress toward goal attainment are more likely to persist to graduation. Developing hope is the third element of the IUPUI ePortfolio conceptual model. As mentioned earlier, hope requires more than optimism; it also requires students to develop pathways to success toward their goals. Students with high hope can persist in the face of obstacles and barriers. Given that adult students face obstacles distinct from those of traditionally aged students, pathways thinking is particularly useful for nontraditional learners. The final aspect of the IUPUI model is the development and constant monitoring of degree and career plans. Each aspect of the conceptual model requires faculty to provide meaningful feedback to students throughout the creation and curation of the ePortfolio. Armed with specific, actionable feedback in each of these domains, students can use this ePortfolio model to succeed in college and their careers.

A 2013 study found that student resistance to changing existing beliefs hinders ability to engage in meaningful reflection. In this study, we examined the ePortfolio work of three populations of students—(a) first-year undergraduates, (b) third-year undergraduates, and (c) professional students. We conclude that students who are more mature (i.e., in their late 20s and older) are better equipped to examine both themselves and the views of others with different opinions. This study may support the use of ePortfolios in adult degree-completion programs, given that a majority of students enrolled in these programs have advanced maturity levels (Faulkner, Aziz, Wayne, & Smith, 2013).

ePortfolio and Adult Learners

Bolliger and Shepherd's (2010) study of ePortfolio integration in online courses explored adult students' attitudes and opinions about how ePortfolios affect their learning and their feelings of connectedness in the online environment. Most students (80%) in the study indicated that the ePortfolio process improved their motivation to learn and that they enjoyed the opportunity to share the ePortfolio with their peers. A large majority of students indicated that the ePortfolio process helped them become better acquainted with their instructors and reported diminished feelings of detachment, which are often present in an online environment. An important finding of the study was

that over 50% of respondents learned more about program expectations through the ePortfolio process. For some students, this clarification reveals a disconnection between their personal goals and the department's objectives. Another student was able to use the ePortfolio process to select courses that aligned with his/her own goals. However, because the study yields mixed results, the authors conclude that ePortfolios are not the only strategy that should be used to clarify program expectations and build community in the online environment. Rather, the ePortfolio should be part of a long-term plan to impact student learning, improve student connectedness and engagement, and clarify personal and program objectives.

Josephsen (2012) suggested nine strategies for successful implementation of ePortfolios in distance programs, three of which relate to technology. The author suggested developing a comprehensive set of technical requirements for the ePortfolio system to work. She also recommended developing instructions for ePortfolio use in multiple media to comply with differences in learning preferences. Josephsen (2012) further recommended providing technical support and instruction for students and faculty and encouraged institutions to provide faculty with mentors to aid in the implementation of the ePortfolio program. Developing a rubric to assess the ePortfolios was also among the author's suggestions. In addition, she warned against making assumptions about the ease with which faculty and students would embrace the ePortfolio. The author was also careful to point out that faculty and student resistance is to be expected, and she encouraged persistence in the ePortfolio process in the face of initial faculty or student hesitancy.

Similarly, in their discussion of the implementation of an ePortfolio program at the Virtual Learning Academy Charter School, Cote and Emmett (2015) suggested 10 components fundamental to adopting an ePortfolio system. Nearly all of the strategies they outlined relate to choosing the appropriate technology. These suggestions include: (a) ensuring that the technology is compatible with and integrated into the broader technology infrastructure of the institution; (b) selecting a platform that is easy to use and painlessly accessible for all users; and (c) choosing a product that allows users to make appropriate privacy decisions. Further, the authors advised selecting a platform that supports multiple file types and allows users to customize their exhibits. Two of the suggestions relate to pedagogy. The first encourages institutions to determine how the ePortfolio intersects with the curriculum, and the second encourages schools to require a reflective component in ePortfolio work. Reflection is a crucial component in the portfolio process, regardless of whether the portfolio is in paper or electronic form.

Herman and Kirkup (2008) studied ePortfolio use by adult women who were returning to school. A compelling number of women (70%) in this study reported finding ePortfolio assignments useful, and even more (77%) claimed they would make use of ePortfolios later in their careers. Many of these students found that the portfolio helped them remember many of their prior learning experiences and recognize their own skills and abilities.

Madden's (2015) discussion of ePortfolio use among adult human-services students reveals another benefit of ePortfolio use among nontraditional learners. In addition to improving students' self-knowledge and discovery of connections between their courses, Madden (2015) reported that the ePortfolio helps to document student activities in the community. Furthermore, the ePortfolio helps the program understand its students' better and clearly illuminates the reasons why they chose the institution. The author suggested that these newly discovered ideas about the student population could aid the university's marketing efforts.

ePortfolios and Interdisciplinary Programs

Both cases presented in this article examine ePortfolio use in interdisciplinary undergraduate programs. Repko, Szostak, and Buchberger's (2014) work is particularly relevant to ePortfolio implementation at both MTSU and ETSU. The authors argued that portfolios are particularly important to programs that require students to integrate concepts from two or more fields of study. The critical thinking and reflection practice required to develop an interdisciplinary portfolio both aids student learning and helps students compile the knowledge and ability they have gained throughout the program of study. Creating the ePortfolio also gives students an opportunity to practice marketing to potential employers their interdisciplinary degrees and the skills they have acquired. Eynon and Gambino (2017) noted that integration is one of the three essential design principles of ePortfolio pedagogy: "Guided by integrative pedagogy, students use ePortfolios to bring together work from multiple contexts, consider the relationship between their classrooms and their lives outside of class, and construct new identities as learners" (p. 35). As an essential ePortfolio principle, integrative pedagogy can help students in interdisciplinary programs make the integration of their studies more visible to others and themselves.

Case Study 1: ePortfolio in a Senior Capstone

Middle Tennessee State University is a large regional doctoral university in the geographic center of the state, with more than 22,000 undergraduate and

graduate students (MTSU, 2016). The primary student population includes traditional on-campus students; however, the university enrolls an increasing number of nontraditional undergraduates. To serve better adult students returning to MTSU to complete their degree, the institution's University College offers interdisciplinary bachelor's degree programs in Liberal Studies and Professional Studies. These programs provide flexibility of scheduling and curriculum design needed by students who cannot enroll in a full-time campus-bound degree program due to work or family commitments. As a result, adult students comprise 70% of the population in these majors, compared to 27.3% of the students in all other undergraduate degree programs offered by the university (MTSU, 2016). Interest in these interdisciplinary programs continues to grow, and in academic year 2015-2016, there were 490 graduates from both programs combined, a 79% increase in five years (MTSU, 2016).

While students may choose to take on-campus courses as part of their program of study, all courses required in the Liberal and Professional Studies programs are available through online delivery. In addition, the university has a prior-learning assessment program to award course credit to students who can demonstrate achievement of established learning outcomes. The depth and breadth of course offerings enable adult students to create a degree plan that aligns with their graduation goals.

The Liberal and Professional Studies degree programs share three student learning outcomes: information literacy, critical thinking, and media communication, measured in a common capstone course (UNIV/PRST 4995) that is typically taken during the final semester before graduation. In the programs' infancy, student media communication proficiency was measured using a multimedia presentation. After a review of the use of ePortfolio at other institutions, the program coordinator and capstone course developer decided to pilot an ePortfolio for Liberal and Professional Studies majors in fall 2013. The process began with a closer review of ePortfolio use at other institutions and the ePortfolio tools they used. The University of Michigan's MPortfolio project was a very helpful resource (University of Michigan MPortfolio, 2015) for developing the ePortfolio template and the reflective writing prompts for program majors. Because MTSU did not have an institution-wide portfolio option, University College contracted with an outside vendor and covered the cost of the portfolio for all students in the program. Although this system worked well for the program, in fall 2016 the University's Learning Management System added an ePortfolio tool (initiated in fall 2017), which is available to all MTSU students. This ePortfolio assignment is now a requirement for these majors, used to demonstrate the students' media-

communication skills, and to provide many benefits to enrolled adult learners. As Herman and Kirkup (2008) mentioned, students noted that an ePortfolio assignment gives them more self-awareness of their knowledge, skills, and abilities.

The ePortfolio assignment requires students to complete five components: (a) personal introduction, (b) professional goals, (c) reflections, (d) evidence of knowledge and skills, and (e) contact information. In the personal introduction section, students write about their personal and academic background and upload a professional photo. In the professional goals section, the students include short-term and long-term career goals. In the knowledge and skill section of the portfolio, faculty members require students to identify at least three competency areas and to upload two artifacts to demonstrate their achievement of each competency area. Artifacts can be chosen from coursework, jobs, internships, service/volunteer work, and training outside of college. A written reflection accompanies each artifact. In their reflections on their artifacts, students connect the experience or work to their academic learning, and reflect on how the competency will benefit their future employer. The hope is that this process allows students to better communicate their interdisciplinary major and corresponding competencies to future employers, a benefit of ePortfolios noted by Repko et al. (2014). As discussed in the literature review, connecting experiences to academic learning can be very motivating for adult learners. Students are able to submit the link to their ePortfolio to potential employers and also to potential graduate schools, should they wish to continue their education.

At MTSU, the ePortfolio is also used to assess student-learning outcomes. As Chatham-Carpenter et al. (2010) noted, of the institutions that report using ePortfolio, fewer report using them for assessment and program review (58%) than for reflection and career-related purposes (approximately 70%). However, learning outcomes assessment was one of the main reasons the MTSU adult degree program adopted the ePortfolio. Capstone faculty use a common rubric to assess students' ability to use the multimedia software effectively to promote their skills and abilities to potential employers after graduation. Annually, a team of faculty reviewers evaluates a sample of ePortfolios from graduating students, to assess students' achievement of the learning outcome. As noted by Eynon and Gambino (2014), "conducting outcomes assessment through ePortfolios grounds assessment in the authentic work of students" (para. 4). Authentic assessment is one of the benefits of using ePortfolios. In interdisciplinary studies programs where a major field test or other examination is not practical as an assessment of student learning, the ePortfolio provides

a way to assess students' achievements in learning and, in some cases, their progress over time.

Case Study 2: Using ePortfolio in a Required Interdisciplinary Course

East Tennessee State University is a midsize regional university located in Northeast Tennessee. Similar in mission to MTSU, the University is comprised of 11 colleges and schools. The School of Continuing Studies and Academic Outreach is home to four undergraduate interdisciplinary degree programs, designed primarily to serve adult and nontraditional students. In fall 2016, the school enrolled 317 students. Just over 56% of the students enrolled in these four degree programs fit the nontraditional student definition, being 25 years of age or older. By comparison, only 18% of all undergraduates at ETSU are 25 or older (ETSU, Office of Institutional Research, 2016).

The School of Continuing Studies and Academic Outreach requires its undergraduate majors to enroll in the course BGSD 2300, Interdisciplinary ePortfolio and its Application. In contrast to the MTSU program, ETSU introduces the ePortfolio to its interdisciplinary majors earlier in their academic program. The primary goals of the ETSU ePortfolio course are twofold. The first goal is that students be able to articulate their interdisciplinary degree program of study as it applies to their educational goals and educational focus. The second goal is that students be able to articulate their interdisciplinary educational competencies to potential employers. Throughout the entire course, students are asked to demonstrate critical thinking about their uniquely interdisciplinary programs of study, as they articulate how their coursework coheres to an integrative educational focus. The hope is that students are not only able to articulate their interdisciplinary program of study for personal reflection but also to represent their diverse competencies to potential employers. The ePortfolio course is the starting point for being able to put these goals into action.

To accomplish the first goal of understanding their interdisciplinary program of study and their interdisciplinary degree, students are required to complete the following assignments: (a) statement of academic goals and objectives; (b) program of study rationale; and (c) general-education reflection. In the statement of academic goals and objectives assignment, students are tasked with writing an essay reflecting upon why they enrolled in the university, their aspirations (both personal and professional), and what skills they will need to achieve their goals and objectives. This assignment relates to Snyder's (2005) research suggesting that students who set clear goals are more likely to achieve their goals. This assignment also helps to establish an intentional goal, thereby enhancing adult

students' motivation to learn—a factor that is essential to adult learning, as established by Knowles et al. (2005). The program of study rationale assignment tasks students with creating their program of study through to the end of the program. This assignment is meant to get students to think critically about their entire education program while at the university, and how each course may benefit their goals and objectives. This assignment also challenges students to engage in pathways thinking (an essential element of hope theory) by forcing students to outline a plan that will culminate in the achievement of their personal and professional goals (Snyder et al., 2002). The general-education assignment is a two-part assignment requiring students to visit the university's general education website, to learn more about the general education philosophy, and to think about how students benefit from general education courses. After the student reflects on the philosophy of general education, he/she chooses one of the general education courses from the program of study taken and outlines the academic benefits of the course while reflecting upon the benefits of the course work.

To accomplish the second goal of the ePortfolio course (i.e., articulating an interdisciplinary program of study and an interdisciplinary degree to future employers), students must complete assignments geared toward showcasing their academic skills and value, including a (a) resume assignment, (b) classroom-to-work-reflection assignment, and (c) ePortfolio upload assignment. The classroom-to-work assignment requires students to write an essay reflecting upon a time in their life when they were able to apply something they had learned in the classroom to their personal or professional life. Students are also able to reflect upon a time when something in their personal or professional life helped them to better understand a classroom concept. The ePortfolio upload assignment requires students to upload a clean and edited copy of each of the assignments created in the ePortfolio course to a platform maintained by the University Career Services (UCS). One of the benefits of the UCS platform is that students have free access to the ePortfolio when currently enrolled and, as university alumni, retain access to the ePortfolio after graduation. From this platform, students currently enrolled and university alumni have access to this free service. Once an actual ePortfolio is created and uploaded to the platform, students are able to access online both regional and national job boards. Additionally, potential employers also have access to student ePortfolios through this platform. Students also must post the link to their ePortfolio to the final course discussion board, so that their classmates may view their portfolio for peer-review purposes.

The instructor of the class vets all assignments and artifacts uploaded to the student's ePortfolio for

publication. The student has the opportunity throughout the course to make appropriate changes and corrections to the artifacts before uploading to ePortfolio and the University platform. Additionally, staff members in Career Services also vet the student's resume before the student is allowed to publish the ePortfolio. In addition to offering students the opportunity to create and design an ePortfolio and a unique digital presence, the ePortfolio course aligns students with other University Services available to them as students and alumni of the University.

Once students successfully complete BGSD 2300, Interdisciplinary ePortfolio and its Application, and publish the ePortfolio on the University Career Services platform, they are free to edit and add artifacts at any time. As part of the graduation requirements for the School of Continuing Studies degree programs, all students must take and successfully complete a Senior Capstone course. As part of the requirements of this course, students will upload two assignments from the Capstone course to their ePortfolio: the Capstone Reflection Assignment and the Final Capstone Project Research Paper. The Capstone Reflection Assignment allows students the opportunity to reflect upon their journey to completing their degree. The capstone is meant to be a culmination of a student's university career and life experience, with the goal of showcasing the vast body of knowledge and academic skills students have acquired over their college experience. In this assignment, students reflect upon their chosen Capstone project, how they may be able to apply it to their personal and professional life, and what this process says about the value they place on finishing their degree. The Final Capstone Project Research Paper is meant to serve as a showcase of the student's research, writing, and critical thinking skills, as well as a polished piece of scholarly academic work. Many students will be able to submit the link to their ePortfolio to potential employers, as well as to potential graduate schools, should they wish to continue their education.

Suggestions for ePortfolio Implementation

When institutions consider implementing an ePortfolio in an adult degree-completion program, several considerations are important. First, an institution should consider which units will use the electronic portfolio system. In some institutions, multiple departments, degree programs across several units, or even the entire university may be interested in using the ePortfolio tool. Institutional-effectiveness units may be interested in the assessment feature. Advisors or student affairs staff may be interested in using the ePortfolio to showcase student development. Career Services may be interested in the ePortfolio as a tool to assist students with job acquisition. Academic affairs may consider the use of ePortfolios for faculty

tenure and promotion. The identification of units considering use of the electronic portfolio system will drive who must be involved in discussion of selecting and implementing an ePortfolio. As mentioned by Chatham-Carpenter et al. (2010), systematic planning is essential. In both of the cases presented here, faculty and staff in adult degree program units originally self-initiated contracts with a third-party ePortfolio vendor. These unit-based contracts were pursued because there was no university-wide ePortfolio system. Later, both units abandoned those contracts to integrate their ePortfolio courses with ePortfolio products available to the entire university population. MTSU used an ePortfolio housed within a learning management system, and ETSU started using an ePortfolio platform offered through University Career Services. If adult degree programs at other universities adopt ePortfolio practices, best practices indicate that it is ideal to adopt an ePortfolio system that would meet the needs of all university stakeholders. This practice means that faculty, staff, and students only need to be trained to use one system and that student work can be housed in one platform to be used for many purposes.

Determining the purpose of the ePortfolio is related to these considerations. In our cases, the purpose was:

- to help students identify and better understand their interdisciplinary knowledge/competencies;
- to enrich student learning by helping students connect prior knowledge to classroom learning, and practice reflection skills; and
- to assess student learning outcomes in a major.

Institutions may want to assess course-level outcomes or program-level outcomes, showcase student development, foster integrative thinking and reflection, or achieve some other learning outcome. Knowing the purpose will assist institutions, as they consider which technology tool is the best fit and how to structure the ePortfolio.

ePortfolios offer many features. When evaluating a tool, institutions should consider usability, customizability by the institution or the student, assessment tools (e.g., rubrics, reports), single sign-on capability (integrated with institution's learning management system), as recommended by Cote and Emmett (2015), easy portability after graduation, design capabilities, and file storage limits. Depending on the institution's purpose(s) for the ePortfolio, some features will be more or less important.

In addition to the features each offers, the institution should also consider whether an institutionally created, open-source, or purchased turnkey solution, a hosted or non-hosted solution, or a student-purchased subscription is best for its student population and the institution. Each of these has benefits and drawbacks. As noted in the

literature review, choosing the appropriate technology is a fundamental decision with many considerations (Cote & Emmett, 2015).

Although the cost of purchasing, or paying someone to design, the ePortfolio system is the primary resource need, other resources must be considered. As noted in the literature (Chatham-Carter et al., 2010; Josephson, 2012) successful implementation requires training and support for faculty and students. Instructors will need pedagogical guidance, technical training, and ongoing professional development on best practices. Students will also need technical support and user guides, which may or may not be provided by the ePortfolio provider. Information technology resources will be needed if Learning Management System integration is chosen. If the solution does not offer a single sign-on feature, staff time will be required to initiate and maintain student and faculty access to the system.

With any type of new educational tool, evaluation is critical. Before implementation, institutions should consider what evidence is needed to evaluate the ePortfolio's impact and provide feedback for improvement. The Catalyst for Learning (n.d.) website is a recommended resource for institutions considering ePortfolio implementation and the development of an outcomes assessment plan. The site showcases stories from institutions that have implemented ePortfolio-based outcomes assessment, as well as resources and links to articles.

Best Practices for ePortfolio Implementation With Adult Student Populations

When implementing ePortfolios in adult degree completion programs, it is important to embrace strong adult learning principles. In both of the cases presented here, ePortfolios enhance adult students' ability to self-direct their learning, define workable goals, and craft plans for the achievement of those goals. Savage and Smith (2008), Tovar (2008), and Faulkner et al. (2013) all produced studies that linked hope theory with adult learner success. The case studies presented here also help illuminate the importance of the elements of hope theory. In both cases, students are required to define and discuss personal and professional goals. Goal setting is the first-step in hope theory. In the ETSU case, students are also asked to define a path to graduation. In defining this path, students also examine how each course in the degree plan contributes to the achievement of their stated goals and objectives. By playing an active role in developing the degree plan, students are able to self-direct their learning toward their personal goals and to create a pathway to the achievement of those goals. This process helps adult students develop both pathways thinking and agency thinking—the second and third elements of hope

theory. Using the ePortfolio to help adult learners define their goals and develop a plan for degree completion can help them persist to graduation. Faculty should consider crafting ePortfolio assignments that heighten the presence of hope among adult students.

Faulkner et al.'s (2013) study also revealed that adult students are often better at reflecting upon their academic experiences than their traditionally-aged counterparts. Both MTSU and ETSU students engage in reflective activities when engaging in the ePortfolio process. At both universities, reflection produces two outcomes. First, reflection helps students integrate knowledge from two or more disciplines. Second, the reflection helped students identify skills and abilities they had learned from their coursework that would help them in their careers. The Repko et al. (2014) and Herman and Kirkup (2008) studies both supported the best practice of including reflective assignments when implementing an ePortfolio program for adult students.

The ePortfolio tool can also be a process through which institutions can learn more about adult learners. Cross (1981) explained that adult learning providers could improve programming for their students if they had a better understanding of adults' short-term and long-term goals. Further Faulkner et al. (2013) discovered that a deeper understanding of adult students' motivation, as expressed through the ePortfolio process, assisted with marketing efforts. Academic units who serve adult students can benefit from the in-depth exploration of student goals and student learning that emerge from ePortfolio implementation.

In summary, using ePortfolios in adult degree programs can heighten levels of hope, improve students' abilities to integrate knowledge from two or more disciplines, and help students link their learning to career skills. Furthermore, institutions can use ePortfolios to learn more about their students' short and long-term goals and this learning process may help institutions market to and better reach the adult student market.

Discussion

This case study demonstrates that ePortfolio use has been beneficial in interdisciplinary adult degree programs at two comprehensive universities. Both institutions plan to continue and expand their ePortfolio usage in these programs. Even though the ePortfolio implementation at these two institutions has been successful, three key lessons were learned. Some of the lessons are unique to the adult population served. First, a returning student population heightens the probability that students will not have retained academic artifacts from their previous coursework to showcase. If a program asks the student to create a showcase ePortfolio, the ePortfolio requirements should be flexible, adaptive to students' reentry points, and able to allow students to incorporate artifacts from outside their

coursework. Second, students typically declare degree-completion majors as juniors and may not come into these programs or courses with a knowledge base about interdisciplinary studies, writing reflections, or integrative thinking. As a result, having a course such as the one at ETSU, which introduces these concepts and the ePortfolio early in the program, is beneficial. Finally, although both institutions began with an ePortfolio system that was not integrated into a campus ePortfolio system, both programs have moved to an integrated campus ePortfolio system, which has resulted in greater efficiency in terms of administration, cost, and student access. Given these benefits, this approach is highly recommended. In summary, institutions looking to implement ePortfolio as a major part of an interdisciplinary adult degree program should ensure that the goals of the ePortfolio align with the learning outcomes of the major; that students have the background or tools to be successful; and that faculty understand the goals of the portfolio, know how to assess the student work, and receive adequate training and support.

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